Annual Reports PPC Vol. 2, 1958

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Fiscal Year 1958
Annual Reports

Volume 2

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

MEDITERRANEAN FRUIT FLY

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

By June 30, 1957, the Mediterranean fruit fly apparently had been eradicated from 21 of the 28 Florida counties which were found infested in 1956.

During the period July 1, 1957, to June 30, 1958, bait sprays were applied in seven Florida counties; namely, Hillsborough, Lake, Manatee, Orange, Pasco, Pinellas, and Polk. However, specimens were found during this report period in only three of these counties, Hillsborough, Manatee, and Polk. The spray treatments in the other counties were a result of finds in May and June 1957. Eradication apparently was accomplished in each of the above-named counties, and the last aerial spray was applied on February 25, 1958; and by that date quarantine restrictions had been removed from all counties.

An intensive trapping program was continued in Florida through the summer of 1957; and, although trap numbers were cut to some extent during the winter of 1957-58, they were again increased in the spring of 1958. The combination trapping program, wherein traps were operated for five species of fruit flies, Mediterranean, melon, Oriental, Queensland, and Natal, was initiated in Florida for the first time in January 1958.

B. Major deviation from Work Plan

There was no major deviation from Work Plan. The only change of any consequence revolved around trapping operations necessitated as a result of the availability of lures, and as a result of the several severe freezes during the winter of 1957-58. There were also considerable changes made in the spray program as a result of the severe winter.

C. Status of Program at close of year

Apparently the Medfly has been eradicated from Florida for the second time; however, an intensive trapping program must be continued to be assured that there are no infestations remaining.

II. Program Activity during fiscal year

A. Planning and Direction

1. How planned and directed

The program was planned and directed and instructions issued jointly by personnel of the State Plant Board of Florida and

the Plant Pest Control Division. In planning the program very close working relations were maintained with the Entomology Research Laboratory in Hawaii, and the Florida Experiment Station, to take full advantage of current information developed by these research organizations.

B. Technical Assistance

1. Technical Assistance provided to farmers and others by program personnel

Shippers of quarantined materials were advised as to the ways and means of certifying their products for movement from regulated areas. Such information included instructions as to fumigation, processing, and use of approved insecticidal treatments around approved fumigation or processing plants and feed mills. Growers were advised of ways and means of assisting in eradication treatments through the clean-up of drops and being on the lookout for infestations.

2. Technical assistance provided to program by cooperating agencies

Personnel of the Entomology Research Laboratory in Hawaii provided timely and pertinent information to assist in the direction of all phases of the program. Assistance was also provided by personnel of the Florida Experiment Station in checking on trapping operations under Florida conditions, particularly as relate to the rate of lure volatilization.

C. Survey

1. Procedures or techniques used

In Florida, the survey program consisted almost entirely of an effective trapping operation involving the use of the Steiner wick-type dry trap. These traps were operated on a one- to three-week schedule, depending upon the trap area involved in relation to the date on which the last Medfly was found in each specific area. At the end of the report period all traps were operated on a 3-week schedule. Oil of angelica seed or Ent. 21486 was the lure used in trapping operations for the Medfly. This lure also attracts the Natal fruit fly. A mixture of anisyl acetone-methyl eugenol was used with oil of angelica in the traps operated to determine the presence of the melon, Oriental, and Queensland fruit flies.

Intensive larval inspections were made around each area where adults were trapped in an attempt to locate the focal point of infestation.

In the noninfested states, trapping for the Medfly was carried on during the year in all susceptible areas, with 44 traps in Alabama, 395 in Georgia, 120 in Louisiana, 50 in Mississippi, 100 in South Carolina and 240 in Texas. In addition, traps were operated at ports of entry by employees of the Plant Quarantine Division. Traps were placed in commercial fruit growing sections, at small citrus plants, around fruit stands, along highways used by tourists coming from Florida, at international airports, along ports and coastal waterways, and at other likely points of introduction. All inspections in these states were negative.

2. Accomplishments

The maximum number of traps in the field in Florida during any one month was in July 1957, when 48,760 traps were in use. The number of traps was reduced during the winter months to a low of approximately 24,000 and increased again in the spring of 1958 to a high of 32,715. Trapping operations at the close of the report period were more effective than at any time during the eradication effort. During the year only 13 flies were trapped in Florida, with the last recovery on the 26th of November. No larval specimens could be recovered in the intensive fruit inspections around each focal point where adults had been trapped, indicating that the populations were extremely light.

3. Statement or table of pest damage

populations were reduced to the extent that there was no economic damage in the 1957-58 fiscal year.

D. Eradication or Control

1. Procedures or techniques used

Aerial bait sprays were applied around all points of infestation. The treatments were continued for a period of from 57 to 91 days after the last fly find, depending upon the period of the year in which the specimens were recovered and the density of populations involved.

In addition to the aerial applications, bait sprays were applied through the use of mist blowers around the focal point of infestation between aerial applications when rainfall had removed spray residues, and for an additional two to three weeks after the last aerial spray was applied.

The formula used in the bait spray applications was 1.2 pounds of 25 percent wettable malathion and 1.2 pounds of Staley

Sauce Base No. 7 (corn protein hydrolysate), with sufficient water to make one gallon. This mixture was applied at the rate of one gallon per acre per application on a 7-day schedule. The same quantity of insecticide and bait was applied with ground equipment, but the amount of water varied, depending upon the type of equipment being used.

Ten percent granular dieldrin was applied by hand seeders immediately around the focal point where specimens were recovered.

2. Accomplishments

During the report year, the greatest single acreage under control in Florida was in July, when 31,100 acres were treated with bait sprays. The aggregate acreage under treatment that month was 107,652. By late September, aerial bait spray treatments had been completed in all counties, with the exception of Manatee, final aerial applications being applied in that county on the 25th of February 1958. During the report period, 232,438 aggregate acres were bait-sprayed.

E. Regulatory

1. Procedures or techniques used

Fruit from regulated areas was fumigated in approved fumigation chambers. Some of the chambers were specially constructed, but the majority were modifications of existing "degreening" rooms. All chambers were checked by authorized personnel to assure compliance with the necessary fumigation standards. Fruit for processing went to approved plants, and the refuse from the fumigation chambers and processing plant operations was disposed of at approved feed mills or otherwise destroyed in accordance with quarantine regulations. A single application of granular dieldrin was made to the soil surface around all the approved plants, and bait sprays were applied on a 10-day schedule during the period that regulated fruit was being handled.

2. Accomplishments

Seventy-three different concerns were authorized to operate 121 approved fumigation chambers in July 1957. As infestations were eliminated from each county, the companies and chambers in that county were withdrawn from the approved list in order that fruit would not be moved from a regulated area in one county to another. Following the outbreak in Manatee County in November 1957, special arrangements were made to move fruit from the regulated areas in that county to an adjacent county since adequate facilities were not available in Manatee. Only

three fumigation chambers were approved to handle this fruit. Special safeguards were followed to assure no spillage or diversion en route.

F. Methods Improvement

Tests were run under Florida field conditions to determine how long flies would remain in the traps. This information was needed as a guide to determine the schedule on which traps could be operated. In these tests it was demonstrated that the flies would remain in the trap satisfactorily for at least three weeks. Concurrent with these tests, studies were made under Florida conditions, in cooperation with the Florida Experiment Station, to determine the rate of volatilization of the lures used under both winter and summer conditions. With adjustments in dosage applications, it was determined that lures would be effective for three weeks. Therefore, it was possible to operate the traps satisfactorily on a 3-week schedule.

Modifications were made in the method of installing wires to hold the wicks. This was necessary when traps were converted from strictly Medfly operation to a combination fruit fly trapping program, and was needed also when shifts were made from a small wick used with oil of angelica to the large wick needed with the synthetic lures.

Field studies were carried on to determine, if possible, the age of flies which were trapped. As a result of these studies, it was found that a trained laboratory examiner could determine rather accurately the age of specimens on the basis of their appearance, and therefore determine by examining males whether the insect had been out long enough to be sexually mature. All of the above studies were carried on in consultation with the research organization in Hawaii, it being realized that adjustments might be necessary under Florida conditions.

G. Other

1. Cooperation received during fiscal year

The Extension Service in Florida continued to work closely with the program, assisting in getting out current information to the public and in obtaining office and storage space from county and city governments, as well as from growers. Growers followed recommendations made regarding clean-up operations on their properties. The citrus industry, and others affected by quarantine regulations, followed the necessary safeguards needed to prevent artificial spread of the pest. Citrus organizations were of considerable assistance in getting out timely information through their publications to growers, keeping them well informed of any changes

in quarantine areas. Newspapers and radio and TV stations also cooperated in disseminating information.

Personnel of the Florida Experiment Station cooperated in connection with studies to improve program techniques, using background data obtained from the Research Station in Hawaii and adapting the information to fit Florida conditions. This work needs to be strengthened in the years to come, especially in order to work out tolerances for many fruits and vegetables that may be subject to additional quarantine action.

2. Associated activities and services

Extensive use was made of program aids such as bulletins, circulars, and maps in acquainting the public with the program. Numerous news articles were released. The program was reviewed at public meetings and presented over the radio and TV stations.

III. Recommendations for coming year

A. Survey

A trapping program should be continued in order to be constantly on the lookout for this pest.

B. Eradication or control

Not applicable unless new infestations are found.

C. Regulatory

Not applicable unless new infestations are found.

D. Methods Improvement

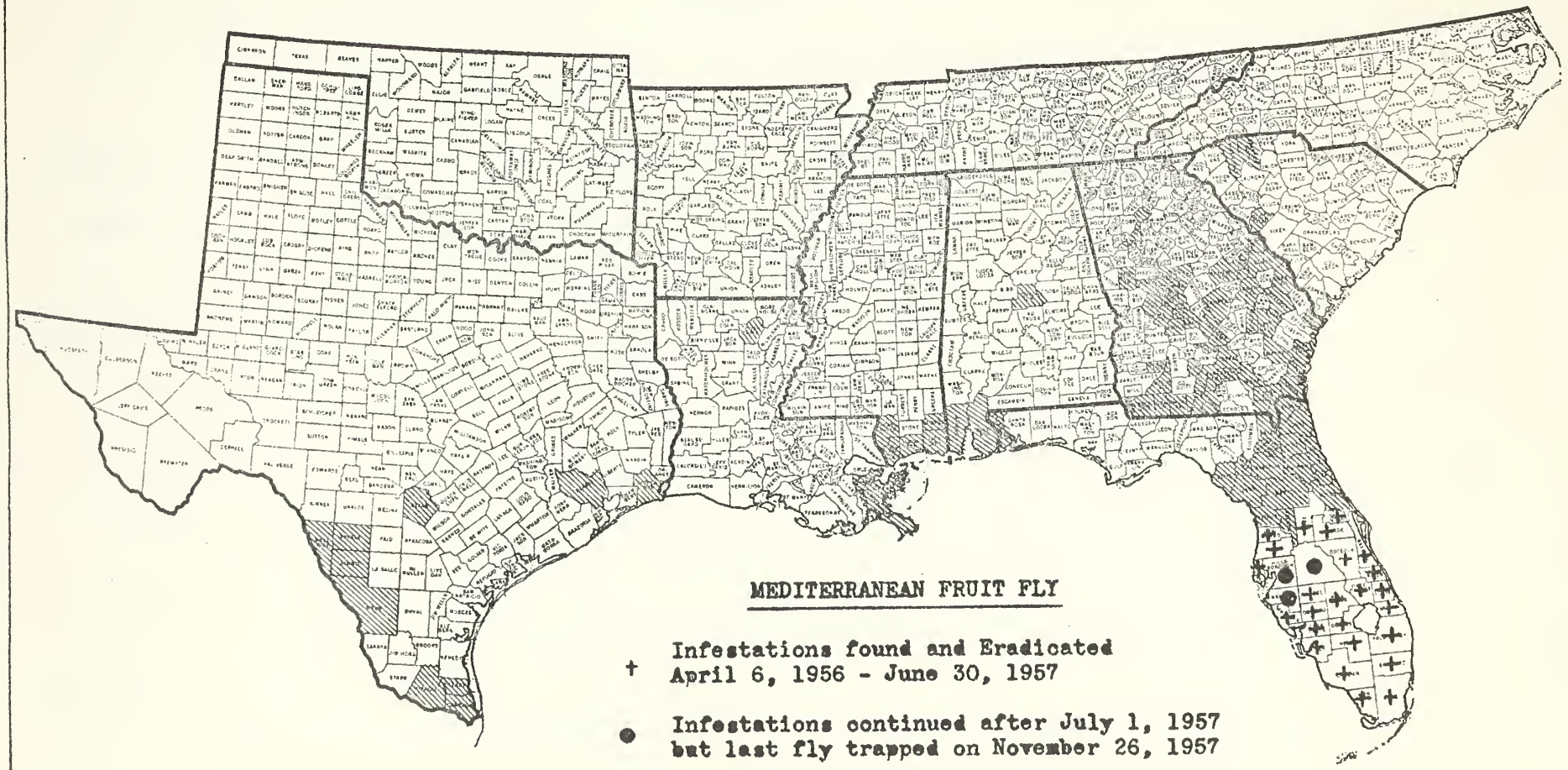
Continued work will need to be done under Florida conditions to assure the use of the most effective trapping procedures. As new lures are made available, dosages will have to be tested under Florida conditions. The principal work needed, however, related to checking Florida fruit and vegetables which will be subject to quarantine regulations in the event of the discovery of any one of the important tropical fruit flies. Tolerance studies should be carried on, patterned after approved commodity treatment schedules, to determine whether the affected products grown in the State will tolerate the treatments.

E. Associated Activities

Efforts should be continued to keep the public informed of the need for continued alertness for any possible new infestation.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



MEDITERRANEAN FRUIT FLY

+ Infestations found and Eradicated April 6, 1956 - June 30, 1957

● Infestations continued after July 1, 1957 but last fly trapped on November 26, 1957

Negative Surveys

MEDITERRANEAN FRUIT FLY

Region	Prepared by
Southern	
Period *(Designate: Month, 1-15, 16-31, or 1-31)*	Date prepared
Fiscal Year 1958	

STATE AND COUNTY* A	NEW INFESTATIONS Previously Infested Counties: Old Spray Areas B	NEW INFESTATIONS Previously Infested Counties: Non-Spray Areas C	TRAPS IN USE: Florida D	TRAPS IN USE: Other States E	POSITIVE SPECIMENS RECOVERED: Collections F	Properties G	Adults H	Larvae I	Recurrences J	New Finds K
Florida			48,760		7	6	13	0	~~3~~ 1	~~2~~ 7
Alabama				44						
Georgia				395						
Louisiana				120						
Mississippi				50						
South Carolina				100						
Texas				240						
Total This Period										
Total From July 1			48,760	949	7	6	13	0	~~3~~ 1	~~2~~ 7
Total From Beginning of Program										

* Designate date when Mediterranean Fruit Fly is found in county for the first time. Use date on which identifying authority signs for the item.

PPC 7-16
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

MEDITERRANEAN FRUIT FLY

Region	Prepared by
Southern	
Period *(Designate: Month, 1-15, 16-31, or 1-31)*	Date prepared
Fiscal Year 1958	

STATE AND COUNTY A	BAIT SPRAYS			SOIL TREATMENT		ACRES HELD For Treatment Next Period G	APPROVED FUMIGATION	
	Acres One or More Times B	Acres Under Treatment C	Aggregate Acres Treated D	Acres Ground E	Acres Air F		New Companies H	New Chambers I
Florida			232,438					
Total This Period								
Total From July 1			232,438					
Total From Beginning of Program			6,806,363	24,895	4,442			

PPC 7-16a
(Feb. - 58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Mediterranean Fruit Fly

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Florida	8	5	8			2	623	7	5,000		7	
Total	8	5	8			2	623	7	5,000		7	

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
MEXICO REGION FOR COOPERATIVE PROGRAMS

ANNUAL PROGRAM REPORT

MEXICAN FRUIT FLY AND CITRUS BLACKFLY PROGRAM
MEXICAN FRUIT FLY

July 1, 1957 - June 30, 1958

In cooperation with

MEXICAN DEFENSA AGRICOLA

November 10, 1958
Monterrey, N. L., Mexico

W. K. Clore
Regional Supervisor

I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

A. Accomplishment for the Fiscal Year

Surveys indicate that eradication spray operations apparently accomplished the program objectives of eliminating the incipient infestation of Mexican fruit fly in northern Baja California of the Western Area, and inspection stations as well as seasonal inspections of the principal city fruit markets have thus far prevented a reinfestation by intercepting and destroying, or fumigating, all susceptible host materials from infested zones.

B. Major Deviation from Work Plan

The Biological Control Specialist of PPCD, stationed at Mexico City, became actively engaged in the introduction of parasites for control of various fruit flies of the genus *Anastrepha*. This work was in cooperation with Defensa Agricola. Parasites were received from Hawaii in exchange for insects attacking Lantana and other noxious weeds, collected in Mexico by Defensa Agricola for control of the weeds in Hawaii.

C. Status of Program at Close of Year

Based on the results of the survey and trapping operations, the main objective of the Mexican fruit fly program in Baja California for the fiscal year was accomplished. No fruit flies were trapped after August 20, 1957 through June 1958, which indicated that the incipient infestation was eradicated by the spray program. By prohibiting the entry of host fruits from the infested areas of the mainland, except under a certificate of fumigation, the area was maintained free of *Anastrepha ludens* throughout the balance of the fiscal year.

In zones where only biological control was practiced, parasitization of the Mexican fruit fly and guava fruit fly had increased generally by 20 per cent in locations where parasites had become established. There were sufficient parasites in the Cuernavaca zone for collection and release in other fruit growing zones.

II. PROGRAM ACTIVITY DURING FISCAL YEAR

A. Planning and Direction

The Chief of the Northwest Control Zone of the Mexican Defensa Agricola, the Area Supervisor and his assistant of the Plant Pest Control Division, plan together the various activities such as surveys, trapping operations, eradication efforts and the enforcement of quarantine regulations. This includes the treatments of host fruits and the inspection of all types of traffic for quarantined commodities.

II. PROGRAM ACTIVITY DURING FISCAL YEAR - continued

B. Technical Assistance

1. Technical Assistance Provided to Farmers and Others by Program Personnel (Not applicable)

2. Technical Assistance Provided to Program by Cooperating Agencies

The Mexico City Fruit Fly Laboratory of Fruit Insect Section of the Research Division makes recommendations on lures for trapping as well as bait spray formulas.

The Biological Control Specialist of PPCD reports that parasites for control of the fruit fly have become well established in all gardens and groves in the Cuernavaca, Morelos zone where no spraying was done during the year. In one garden where no parasite releases were made this year there were 96 per cent parasitization of Mexican fruit fly, of which 72 per cent was the parasite Syntomosphyrum sp. and 24 per cent Opius sp. In Cuernavaca, guava fruit matured without infestation for the first time in several years. This may have been due to the high parasitization of fruit fly in the last of the infested guavas in December 1957 which carried over to the following crop.

Laboratories (including a sub-laboratory at Coatepec, Veracruz) were established by Defensa Agricola at several points in the fruit growing areas of southern Mexico for the purpose of rearing and releasing parasites of the Mexican fruit fly as well as of other insects. A number of lots of fruit containing parasitized larvae of the fruit fly were collected and deposited in other fruit fly infested locations throughout several states in the fruit growing areas. The parasite Syntomosphyrum became established at one of the release points near Coatepec, Veracruz, as was indicated by examination of Mexican fruit fly larvae in oranges.

C. Survey

1. Procedures or Techniques Used

a. Field. The purpose of the fruit fly survey was to detect the fly if present, to delimit the infestation, and to check the effectiveness of the eradication spray program. Two methods of survey were used in northern Baja California and San Luis, Sonora. One was the glass fly trap with sugar, brewer's yeast and pyridine; the other was to examine fallen host fruits on trapped properties for the detection of larvae.

b. Laboratory. (Not applicable)

2. Accomplishments

Trap inspections totalling 50,246 were made of 1,438 traps on 611 separate properties. When these properties were visited each week for trap servicing, all available dropped fruit were examined for larval infestations. No larvae were detected. Ninety-six fruit flies were trapped from July 1 through August 20, 1957; no more being taken to the end of the fiscal year.

II. PROGRAM ACTIVITY DURING FISCAL YEAR - continued

C. 3. Statement or Table of Pest Damage

No evidence of fruit fly damage in the area.

D. Eradication or Control

1. Procedures or Techniques Used

The presence of fruit flies in the extreme northern portion of Baja California adjacent to San Diego County, California was determined by the recovery of 96 fruit flies between July 1 and August 20, 1957 from traps operated in the area. All host trees in that area were sprayed at 21-day intervals between July 1 and November 15, 1957 and from March 17 to June 30, 1958, with eight pounds of 25 per cent wettable malathion and two pounds of partially hydrolyzed yeast as an attractant, per 100 gallons of water.

2. Accomplishments

It is believed that eradication was accomplished in the fall of 1957. No larvae have ever been detected in host fruits grown in the area.

During the fiscal year 431,314 host trees were sprayed on 60,752 properties. Increased opposition from many property owners to the regular 21-day spraying schedule was voiced, especially toward the end of the year. (See Table 1).

E. Regulatory

1. Procedures or Techniques Used

Under the authority of Mexico's Interior Quarantine #2, inspections were maintained at strategic highway stations, railway points, airports, and a seaport to regulate the movement of fruits and other agricultural commodities to prevent the introduction and establishment of the Mexican fruit fly as well as other dangerous insect pests into Northwest Mexico. All highway traffic that passed through two road stations was inspected. One is at Benjamin Hill, Sonora, approximately 90 miles north of Hermosillo, the northernmost point on the west coast of Mexico that an infestation of Mexican fruit fly is known to be established; the other at San Luis, Sonora on the west side of the Altar Desert, 16 miles east of the Colorado River Valley in Mexico.

Inspections were made of passenger baggage, express, and cargo shipments at the airports of Nogales, Sonora; Mexicali, Tijuana and Ensenada, Baja California. Regular examination of postal receipts, as well as market inspections during the mango season were maintained in the aforementioned cities for contraband shipments of host fruits. All passenger baggage as well as freight cargo from boats was inspected on arrival at Ensenada, the only seaport on the west coast of Baja California.

II. PROGRAM ACTIVITY DURING FISCAL YEAR - concluded

E. 1 - concluded

Two fumigation chambers for the treatment of commercial shipments of citrus fruits, mangoes, and plums, originating outside of the pest-free area, one located at Hermosillo, Sonora, and the other at Ensenada, Baja California, were operated during the shipping season for these commodities. Treatments require two hours of exposure at 70° F or above at a dosage of 10 oz. of ethylene dibromide gas per 1,000 cu. ft. under constant air circulation. The commodities are eligible for entry after treatment, under certification, without further restrictions.

2. Accomplishments

Numerous interceptions of contraband shipments of fruits infested with Mexican fruit fly larvae were made at the various inspection points and stations, verifying the necessity for a continuation of this service. (See Table 2 for interceptions of host materials) In addition, 904,417 kilos of mangoes; 419,947 kilos of oranges; 1,500 kilos of grapefruit, and 5,110 kilos of plums were fumigated in the chambers located at Benjamin Hill and Ensenada for a total tonnage of 1.330,974 kilos. The percentage of infestation per truckload ran from 1% to 18%, with an average infestation of approximately 3%.

F. Methods Improvement (Not applicable)

G. Other

1. Cooperation Received During Fiscal Year

The Mexican fruit fly program is cooperative, conducted under a Memorandum of Understanding between the PPC Division of the USDA and the Mexican Defensa Agricola. The Mexican Defensa Agricola and the local patronatos pay part of the salaries of inspectors at the road stations and all other inspection points. They also furnish the space for and part of the equipment at all road stations and share in the operation costs. Automotive equipment is furnished for a number of the Mexican inspectors by the various patronatos.

All program activities are planned and directed by the Chief of the Northwest Protective Zone and the Area Supervisor and his assistant of the Western Area. The enforcement of all quarantines and related regulatory work is the responsibility of the Mexican Agricultural authorities.

2. Associated Activities and Services

a. Program Servicing (1) Evaluation

Frequent meetings and conferences were held by the supervisory personnel of the Western Area with the state and county commissioners of California, together with officials of the Western Region, for the purpose of discussing the Mexican fruit fly problems and coordinating the work.

III. RECOMMENDATIONS FOR COMING YEAR

A. Survey

Is is recommended that a year-round survey be maintained of the Baja California area susceptible to infestation by the Mexican fruit fly by use of traps designed for the purpose and that research continue the work of developing a more effective lure for use in the fly traps.

B. Eradication or Control

Strong opposition is building up from many property owners to the regular 21-day spraying schedule. It is recommended that the spray program end October 31 of the coming year, to be resumed the following spring as conditions warrant.

C. Regulatory

It is recommended that all inspection points be continued and strengthened wherever possible because of the enormous traffic in tourists as well as in agricultural commodities from the mainland of Mexico into northern Sonora and Baja California.

D. Methods Improvement (Not applicable)

E. Associated Activities (Not applicable)

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TABLE 1 MEXICAN FRUIT FLY

Region: MEXICO | Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): July 1, 1957 to JUNE 30, 1958 | Date Prepared:

STATE AND COUNTY A	VISUAL INSPECTION: Properties Inspected B	VISUAL INSPECTION: Properties Infested C	TRAPPING: Properties Trapped D	TRAPPING: Traps in Use E	TRAPPING: Trap Servicings F	TRAPPING: Properties Infested G	TRAPPING: Flies Caught* H	Host Plants Sprayed I	Properties Sprayed
MEXICO									
BAJA CALIFORNIA									
Ensenada	0	0	48	139	5,524	2	2	47,555	1/ 6,072
Mexicali	0	0	115	217	5,609	0	0	0	0
Tecate	0	0	44	134	5,958	0	0	59,016	2/ 5,105
Tijuana	48	0	377	868	31,105	41	94 (2G)	324,743	2/49,575
SONORA									
San Luis	0	0	27	80	2,050				
Total This Period									
F. Y. 1958	48	0	611	1,438	50,246	43	96 (2G)	431,314	60,752

1/ Spraying suspended at end of November, 1957 on completion of 41st spraying.

2/ Spraying operations suspended at end of November, 1957 - Resumed March 18, 1958. On June 30, 1958 5th spraying of Tecate and 5th spraying of Tijuana was completed.

*Indicate by G in parenthesis when flies are gravid.

**Equivalent of 70 pound box.

PPC 7-10 (Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

TABLE I

MEXICAN FRUIT FLY

MEXICO

July 1, 1957 to June 30, 1958

STATE AND COUNTY	Properties Inspected	Properties Infested	Properties Treated	Trees Treated	Acres Treated	Acres Infested	Acres Treated	Acres Infested	Acres Treated	Acres Infested	Acres Treated	Properties Sprayed
BAJA CALIFORNIA												
Ensenada	0	0	46	139	5,524	2	2	47,555	1/ 6,[illegible]			
Mexicali	0	0	115	217	5,600	0	0	0	0			
Tecate	0	0	44	134	5,956	0	0	59,015	2/ 5,105			
Tijuana	48	0	377	508	31,105	41	94 (20)	324,713	2/49,575			
SONORA												
San Luis	0	0	27	80	2,650							
F. Y. 1958	48	0	611	1,438	50,246	43	96 (20)	431,314	60,752			

1/ Spraying suspended at end of November, 1957 on completion of last spraying.

2/ Spraying operations suspended at end of November, 1957 - resumed March 16, 1958. On June 30, 1958 5th spraying of Tecate and 6th spraying of Tijuana was completed.

*Indicate by () in parenthesis when flies are gravid.

**Equivalent of 10 pound lots.

PPC 7-10
(Feb-56)

U.S. DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Quarantine Division

Table

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Region - Mexico

Cooperative Inspection Stations

F. Y. 1958

Inspection Stations	Type of Inspection	Number of Inspections	Number of Passengers & Braceros	Pieces of Baggage & Express	RR cars & trucks cleaned &/or fumigated	Host Interceptions: Occasions MFF	Occasions CBF	Occasions PBW	Items MFF	Items CBF	Items PBW	Items KB
BAJA CALIFORNIA												
Tijuana	Plane	2,848	66,845	236,527	-	1,430	138	-				
Mexicali	Planes	1,221	14,286	51,730								
	Trucks	382		-		273	35	34				
	Railroad	-		14,400	150							
Ensenada	Plane	399	535	1,405		49	10	-				
	Boat	81	533	838		20	14	3/2				
SONORA												
San Luis	Rd.Station	12,124	-	-	-	967	50	217				
Benjamin Hill	RR cars	6,768	-	-	1,365							
	RR pssgr.	-	1/253,954	-		-	-	-	23,227	1,692	4,813	5K.
	Rd.Station	128,873	-	-	316	15,397	874	529				
Nogales	Plane	777	9,353	23,334	-	343	76	31				
	RR Mkt.Mail	Daily	-	-	-	319	66	-				
SINALOA												
Mazatlan	Rd.Station	39,817	81,012	-	1,882						2,510 and 1,075 k. cottonseed	
	Plane	413										
	RR cars	1,126	26,551	0	0							
	RR trains	522										
	Boat	344										
Terreros 2/	Rd.Station	10,723	-	-	327	-	-	-			367	
T O T A L S		206,418	453,069	328,234	4,040	18,798	1,263	813	23,227	1,692	8,765	5k.

1/ 131,658 Braceros. 2/ Station operated since 2/21/58. 3/ 1,769 bales of bagging.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
PROGRAM COST DISTRIBUTION

TABLE 3

MEXICAN FRUIT FLY PROGRAM	MEXICO REGION FOR COOPERATIVE PROGRAMS			Reg. Superv. W. F. Clore		Date 10 NOV 1958	F. Y. 1958
Source of Cash and Equivalent (A)	Planning & Direction (B)	Technical Assistance (C)	Survey (D)	Control (E)	Regulatory (F)	Other (H)	TOTAL (I)
1. PLANT PEST CONTROL ARS							
Headquarters	7,300	3,000					10,300
Western Area	10,400	4,000	10,500	22,000	20,500		67,400
2. SUB-TOTAL	17,700	7,000	10,500	22,000	20,500		77,700
3. OTHER							
Western Area							
Defensa Agricola						9,155	9,155
Patronatos - Baja Calif. & Sonora						13,095	13,095
4. SUB-TOTAL						22,250	22,250
5. TOTAL	17,700	7,000	10,500	22,000	20,500	22,250	99,950
6. CONTRIBUTED SERVICES							
Western Area							
Mexican Federal Gov't.						720	720
7. TOTAL						720	720
8. G R A N D T O T A L	17,700	7,000	10,500	22,000	20,500	22,970	100,670

1. PLANT PEST CONTROL DIVISION units. Areas named.
2. Sub-total for all PPC funds included in (1).
3. OTHER ORGANIZATIONS; measurable cash expenditure.
4. Sub-total for all OTHER ORGANIZATIONS, included in (3).
5. Totals of PPC and OTHER ORGANIZATIONS, (2) plus (4).
6. CONTRIBUTED SERVICES.
7. Total of CONTRIBUTED SERVICES (6) only.
8. GRAND TOTAL (5) and (7).

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

MEXICAN FRUIT FLY

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishments for the fiscal year

A revised Mexican Fruit Fly Quarantine became effective October 25, 1957. The main provisions of the new quarantine are (1) movement of citrus fruit under permit and without treatment to the states of Arizona, California, and Florida from the opening of the shipping season through November, providing trap operations are negative; (2) treatment of all citrus moving to the above citrus producing states beginning December 1 and continuing until the end of the shipping season; (3) treatment of all grapefruit, beginning March 1 and continuing until end of shipping season, moving to the states of Alabama, Arkansas, Georgia, Louisiana, Mississippi, New Mexico, Oklahoma, South Carolina, and that part of Texas outside the presently regulated area; and (4) unrestricted movement of citrus to all other states throughout the season.

Revision of Quarantine No. 64 resulted in increased activity among the packers and shippers in the construction of additional fumigation facilities so as to comply with the new regulations and keep shipments moving without delay. No violations were detected at any time during the 1957-58 shipping season. Although apprehensive at first, shippers were very well pleased with the new regulations which actually were less stringent than the old quarantine.

Fourteen additional fumigation chambers were constructed during fiscal year 1958, the majority of which were converted vapor-heat sterilization rooms. One mobile chamber was constructed by a commercial company for the purpose of treating, on a fee basis, express and single-box shipments destined to states requiring treatment. This facility was most helpful to the program and gift fruit shippers. At the close of fiscal year 1958, twenty packing sheds had one or more fumigation rooms.

B. Major deviation from Work Plan

The operation of road stations was not included in work plans made at the beginning of the fiscal year. On March 1, the date on which treatment was required on grapefruit moving to the southern states, it became obvious that it would be necessary to make road patrols checking trucks and passenger cars to insure compliance with the regulations. Division personnel and Texas Department of Agriculture personnel operated two road stations on the main highways leading from the regulated area from March 1 until heavy movement of fruit ended.

C. Status of Program at close of year

The Mexican fruit fly is native to northeastern Mexico and migrates annually across the border to infest citrus orchards north of the

Rio Grande. Since there is no way to prevent this migration, the program is designed to detect the infestations that develop in Texas and prevent the spread into other fruit producing areas of the United States. During the 1957-58 season, infestations were exceptionally slow in developing. This may have been due to an unusually low population of adult flies in northeast Mexico, coupled with unfavorable weather conditions in Texas. Nevertheless, the insect was again present in Texas orchards, as indicated by the trapping of flies in several counties within the regulated area. No new counties were found infested.

II. Program Activity During Fiscal Year

A. Planning and Direction

1. Program planning was directed by Regional, Area, Sub-Area, and District personnel. All phases of the work were planned, timed, and coordinated according to need, i.e., trapping, treatment, certification, and road station inspection during specific periods of the harvesting and shipping season. District leaders directed field activities in their respective districts.

B. Technical Assistance

1. Program personnel provided technical assistance to packers and shippers in the construction of fumigation chambers and supervised all treatment operations.

2. Research workers, assisted by Program personnel, gave valuable assistance to the citrus industry by conducting experiments resulting in the authorization of treatment of citrus fruit in perforated polyethylene and mesh bags packed in master containers.

The local office of the Marketing Research Division, Agricultural Marketing Service, assisted Research and Program workers by furnishing cold storage facilities needed in connection with fumigant tolerance studies made within the area during the past harvesting season.

C. Survey

1. Procedures or techniques used

a. The operation of traps for the purpose of detecting the presence of adult flies in the orchards, and grove inspections for the purpose of detecting larval infestations were the two methods of survey used. The operation of a minimum of 2,000 traps during October and November was used as a basis for certification of citrus shipments to the states of Arizona, California, and Florida. Beginning March 1, treatment was required on all citrus consigned to the above citrus producing states and the operation of

traps was discontinued, except in a few of the outlying counties within the regulated area. With the revised quarantine in effect during the past season, grove inspections for larval infestations were practically abandoned as blanket treatment was required of grapefruit moving to restricted areas after March 1, which is about the time general larval infestations occur. A few grove inspections were made after March 1.

b. All specimens collected were identified in the District laboratory. Several of the related species of the Mexican fruit fly were trapped and forwarded to Division headquarters for official determination.

2. Accomplishments

Traps, baited with the standard lure, were operated on 133 properties in 9 counties within and adjacent to the regulated area. Adult infestations were found in 6 properties in 4 counties. Casual grove inspections for larvae were made on 97 properties in 9 counties, and only one larval infestation was discovered.

3. Statement or table of Pest Damage

Due to the lateness in the development of larval infestations in the 1957-58 crop, no commercial damage occurred during the past season. The bulk of the crop had been harvested before commercial loss could occur.

D. Eradication or Control

The objective of the program is containment and prevention of spread, rather than eradication.

1. Procedures or techniques used

Ethylene dibromide fumigation was the method of treatment used exclusively during fiscal year 1958. Sterilization by vapor-heat is still an approved method of treatment; however, it is doubtful if it will ever be used again.

2. Accomplishments

During the fiscal year, 444,927 boxes (70# equivalent) were treated with ethylene dibromide before shipment to restricted areas.

E. Regulatory

1. Procedures or techniques used

Certification activities included the enforcement of Federal-State quarantines regulating movement of citrus fruit from the regulated area to restricted areas.

2. Inspection certificates (stamp imprints on single-box shipments) and permits (Master permits on truck and carloads) were issued for movement of fruit after negative trapping results or approved treatment. No certificates or permits were required on fruit from noninfested properties prior to December 1. Thereafter, fruit consigned to Arizona, California, and Florida was fumigated and permits issued on each shipment. Beginning March 1, certification was required on each shipment made to the southern states. No certification was required at any time during the year on shipments to the northern states.

F. Methods Improvement

1. Work Performed

Efforts were made by Program personnel toward the development of a better method for applying fumigants into the fumigation chambers. The method used since fumigation was authorized has been volatilization with an electric heating plate.

2. Accomplishments

Good progress was made toward the future use of an atomizer, designed by a Program employee, to inject, under pressure, the ethylene dibromide (liquid) directly into the circulation system of the chamber. This method of applying the fumigant shows much promise of being a distinct improvement over the heat method.

G. Other

1. Cooperation received during fiscal year

a. Throughout the year, the citrus industry continued its past record of excellent cooperation in all phases of the program. The ethylene dibromide treatment of fruit was accepted as a great improvement over the old vapor-heat method of sterilization. Many packers used the gas treatment method for coloring early season fruit and also for the de-greening of late season fruit.

b. There is no apparent need for the strengthening of cooperative work another year.

2. Associated Activities

a. Program Servicing

At least two public meetings were attended early in the fiscal year by Division and Program personnel in connection with the revised quarantine. Also, the Mexican fruit fly film was shown several times at various civic club meetings.

III. Recommendations for Coming Year

A. Survey

The manner in which surveys shall be conducted is set forth in the revised quarantine now in effect. It is believed that the surveys planned are adequate to provide protection to other fruit growing areas against infestations and should be continued. In order to provide needed statistical information on the Mexican fruit fly population throughout the main portion of the harvesting season, it is recommended that the traps be operated in the citrus producing counties within and adjacent to the regulated area at least through the month of April.

B. Eradication or Control

Since eradication is impossible because of migration of adult Mexican fruit flies from Mexico each year, control will be a continual necessity. The present control regulations are adequate.

C. Regulatory

No changes recommended.

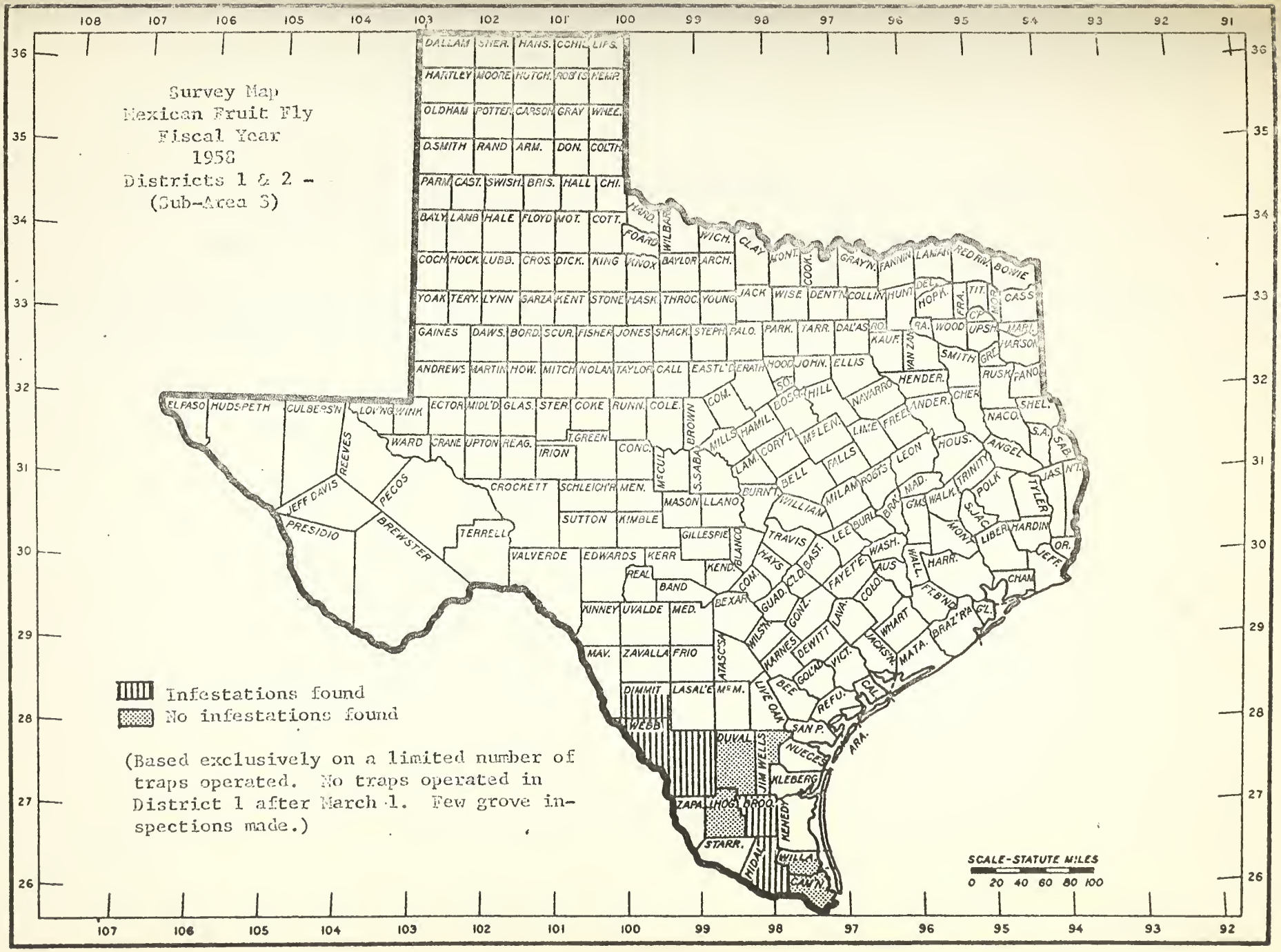
D. Methods Improvement

There is a definite need for approval of treating wrapped fruit in packages and bulk and packaged fruit in gas-tight motor vans. It is recommended that these two methods be approved before the beginning of another shipping season.

E. Associated Activities

It is recommended that the past practice of close cooperation with news agencies and organizations representing the citrus industry be continued.

TEXAS,


Survey Map
Mexican Fruit Fly
Fiscal Year
1958
Districts 1 & 2 -
(Sub-Area 3)
Infestations found
No infestations found
(Based exclusively on a limited number of traps operated. No traps operated in District 1 after March 1. Few grove inspections made.)
SCALE-STATUTE MILES
0 20 40 60 80 100
DALLAM
SHER.
HANS.
OCHIL.
LIPS.
HARTLEY
MOORE
HUTCH.
ROBTS.
HEMP.
OLDHAM
POTTER
CARSON
GRAY
WHEE.
D.SMITH
RAND
ARM.
DON.
COLTH.
PARM.
CAST.
SWISH.
BRIS.
HALL
CHI.
BAL.
LAMB
HALE
FLOYD
MOT.
COTT.
HARD.
FOARD
WILBAR.
WICH.
CLAY
MONT.
COOK.
GRAYN.
FANNIN
LAMAR
RED RIV.
BOWIE
COCH.
HOCK.
LUBB.
CROS.
DICK.
KING
KNOX
BAYLOR
ARCH.
JACK
WISE
DENTN.
COLLIN
HUNT
DEL.
HOPK.
FRA.
TIT.
CASS
YOAK
TERY.
LYNN
GARZA
KENT
STONE
HASK.
THROC.
YOUNG
GAINES
DAWS.
BORD.
SCUR.
FISHER
JONES
SHACK.
STEPH.
PALO.
PARK.
TARR.
DAL'AS
KAUF.
VAN ZAN.
WOOD
UPSH.
MARIO.
MARSON
ANDREWS
MARTIN
HOW.
MITCH.
NOLAN
TAYLOR
CALL
EASTL'D
ERATH
HOOD
JOHN.
ELLIS
SMITH
HENDER.
RUSK
FANO
ELPASO
HUDSPETH
CULBERSN.
LOV'NG
WINK
ECTOR
MIDL'D
GLAS.
STER.
COKE
RUNN.
COLE.
COM.
SOM.
DOSC.
HILL
NAVARRO
FREE.
ANDER.
CHER.
NACO.
SHEL.
S.A.
SAB.
WARD
CRANE
UPTON
REAG.
T.GREEN
IRION
CONC.
McCULL.
BROWN
S.SAB.
MILLS
HAMIL.
LAM.
CORY'L
McLEN.
LIME
FALLS
LEON
HOUS.
ANGEL
TRINITY
POLK
JAS.
N'T.
TYLER
REEVES
PECOS
JEFF DAVIS
PRESIDIO
BREWSTER
CROCKETT
SCHLEICH'R
MEN.
MASON
LLANO
BURN'T
BELL
WILLIAM
MILAM
ROBTS.
MAD.
G'MS
WALK.
SUTTON
KIMBLE
GILLESPIE
BLANCO
TRAVIS
LEE
BURL.
BRA.
MONT.
S.JAC.
LIBER.
HARDIN
JEFF.
OR.
TERRELL
VALVERDE
EDWARDS
KERR
KEND.
HAYS
CALD.
BAST.
FAYET'E
WASH.
AUS.
WALL.
HARR.
CHAM.
REAL
BAND
COM.
BEXAR
GUAD.
GONZ.
COLD.
FT.B'ND
KINNEY
UVALDE
MED.
WILSN.
LAVA.
WHART
BRAZ'RA
GAL.
MAV.
ZAVALLA
FRIO
ATASCSA
HARNES
DEWITT
VICT.
JACKSN.
MATA.
DIMMIT
LASAL'E
McM.
GOLIA.
BEE
REFU.
LIVE OAK
SAN P.
ARA.
WEBB
DUVAL
JIM WELLS
NUECES
KLEBERG
ZAPA.
LMOG.
BROO.
KENEDY
STARR.
HIDAL.
WILLA.
CAM'N.

MEXICAN FRUIT FLY

REGION: Southern

PREPARED BY:

PERIOD (*Designate: Month, 1-15, 16-31, or 1-31*): Fiscal Year 1958

DATE PREPARED:

STATE AND COUNTY A	VISUAL INSPECTION		TRAPPING					HOST PLANTS SPRAYED I	PROPERTIES SPRAYED J	BOXES OF FRUIT** TREATED K
	PROPERTIES INSPECTED B	PROPERTIES INFESTED C	PROPERTIES TRAPPED D	TRAPS IN USE E	TRAP SERVICINGS F	PROPERTIES INFESTED G	FLIES CAUGHT* H			
Texas	97	1	133	-	25,840	6	10	0	0	444,927
TOTAL THIS PERIOD										
TOTAL FROM JULY 1	97	1	133	-	23,840	6	10	0	0	444,927

*INDICATE BY G IN PARENTHESIS WHEN FLIES ARE GRAVID.

**EQUIVALENT OF 70 POUND BOX

PPC 7-10
(JUN-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Mexican Fruit Fly

Region Southern - Texas

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
TEXAS												
District 1 & 2 (Sub-Area 3)	2	1	0	2	0	0	0	0	0	0	0	0
Total	2	1	0	2	0	0	0	0	0	0	0	0

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

MEXICAN FRUIT FLY CONTROL

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PROGRAM ANNUAL REPORT
1958 FISCAL YEAR

• • •

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

_____

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

ANNUAL PROGRAM REPORT

MEXICAN FRUIT FLY CONTROL

July 1, 1957 - June 30, 1958

Cooperating Agencies:

Arizona State Department of Agriculture
California State Department of Agriculture
Imperial County, California Department of Agriculture
San Diego County, California Department of Agriculture

October 30, 1958
Oakland, California

Jim R. Dutton
Regional Supervisor

TABLE OF CONTENTS

HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

Accomplishment for the Fiscal Year

Operations directed against invasion of the Mexican fruit fly into the United States were continued this year in an area along the International Border separating northwestern Mexico from the States of Arizona and California. The program of work included placement and servicing of traps, inspection and disposal of fallen host fruits, and timely application of sprays in suspect border areas. At the peak of operations 5,267 traps were being serviced on 5,671 properties. Eight flies were taken by this method from traps located near San Diego, California. All host plants within five miles of the International Border, principally in the vicinity of Tijuana, Mexico, including many non-host resting places and brushlands, were sprayed during the year. Larval inspection was also made in this area of control. Fallen fruit was collected, inspected, and destroyed. No evidence of infestation was found.

Major Deviation from Work Plan

There were no deviations of major importance in the planned program in Arizona. A review of trap catches in California and Mexico and consideration of the months of the year during which large quantities of infested fruit move northward from the interior of Mexico, indicated that spraying operations could be curtailed without risk during the period December 1 - March 15. This revision of timely spray applications was put into effect during the current period. Because some flies were trapped in an unsprayed portion of brushland near the International Border, the spray area in that type of cover was increased by 50 acres to a total of 250 acres.

Status of Program at Close of Year

Results of survey methods employed and timely applications of spray would indicate that the program objective is being achieved. These measures have continued to prevent the establishment of infestation in California and Arizona for another year. The movement of infested fruit from the interior of Mexico to Mexican Border States, however, would preclude any immediate relaxation of these diligent efforts.

PROGRAM ACTIVITY DURING FISCAL YEAR

Planning and Direction

How planned and directed

The program is conducted in cooperation with the Arizona and California Departments of Agriculture, and in California, the Imperial and San Diego County Departments of Agriculture also actively participate. Informal conferences are held frequently between officials of these organizations and the Plant Pest Control Division, and formal review of the work is conducted semi-annually.

Technical Assistance

Technical assistance provided to farmers and others by program personnel

In Arizona, State and Federal inspectors rendered individual assistance to interested citrus growers by advising them on objectives and methods of the trapping program. No assistance of a technical nature was furnished to growers in the California program.

Technical assistance provided to program by cooperating agencies

The program receives technical advice from the Entomology Research Laboratory in Mexico City on problems of spray formulations, preparation of trapping lures, and related subjects.

Survey

Procedures or techniques used

No deviation was made from methods already employed.

Field

Not applicable.

Laboratory

Not applicable.

Accomplishments

In the Arizona area, trapping was conducted in Yuma Valley and Yuma Mesa sectors of Yuma County during the period November 1, 1957 to April 30, 1958. At the peak of operations, 148 traps were being serviced by State and Federal employees. No flies were found. In California the number of traps rebaited weekly averaged 3,895 on 1,528 properties. However, actual service records for the year indicated that there were 5,119 traps placed on 5,646 properties. Of this number, 1,675 units were operated by the Division. Continuous servicing of traps was made by the counties, state and Division in Imperial and San Diego Counties. Operations resulted in the taking of eight flies near San Diego during July and August 1957. In addition to California trap inspections, collections were made of 64,793 fallen host fruits in regulated areas. These larval inspections did not reveal any established infestation. Subsequent to examination, the fruit was destroyed by fumigation by the California Department of Agriculture.

No other surveys were conducted by the Division outside of the areas now being trapped, inspected, and sprayed. The State of California and several counties within the State, carry on an extensive detection program for the Mexican fruit fly and other fruit flies of economic importance.

Eradication or Control

Procedures or techniques used

Considerable savings in materials were effected this year when the spray program was curtailed and operations restricted to an 8½-month period instead of continuing on an annual basis. This was due to a study of the reduction in trap catches and movement of fruit from infested areas during the period December 1 - March 15.

Accomplishments

Eradicative measures were conducted in areas within one mile of the positive finds in California. All hosts in a barrier strip five miles wide along

the International Border in San Diego County received repeated sprays at 3-week intervals. In addition, brushland and non-host roadside trees were sprayed at 6-week intervals.

Regulatory

Procedures or techniques used

There were no deviations from general program regulatory procedure.

Accomplishments

Not applicable.

Methods Improvement

Work performed

There were no special projects in the Western Region during the year designed to improve control, survey, or regulatory procedure.

Accomplishments

A new spray formula, reportedly developed by the Mexico City Research Laboratory, is indicated as being superior to the formula now in use. In survey work in Arizona, the use of wire screens on McPhail traps was found to facilitate operation of the traps by eliminating larger insects attracted to them. Also, the use of pyridine in traps was discontinued until late in the season when populations became heavy. Inclusion of yeast in the baiting solution was also discontinued after the traps had been operated for several weeks. It was found that they maintained a good growth of yeast after the initial mixings. Adding of yeast fouled the baiting solution to such an extent as to impair the efficiency of the traps.

Other

Cooperation received during fiscal year

The California program is operated in cooperation with the Bureau of Entomology of the California State Department of Agriculture, and the San Diego and Imperial County Departments of Agriculture. The state and counties actively participate in the operation of traps,

application of sprays, fruit inspections, and furnishing money and manpower in the direction of the program. The Plant Pest Control Division assists in furnishing survey personnel and provides funds for supplying spray materials. In Arizona the Commission of Agriculture and Horticulture's District Entomologist's staff assisted in locating, maintaining, and inspecting traps used in the annual period of survey.

The research facilities and advice given by Entomology Research Laboratory in Mexico City continued to be of valuable assistance to the program.

Cooperative work needing strengthening another year

Cooperation is excellent at the present time.

Associated activities and services

Program servicing

Arizona survey procedures were amply depicted by publication in a Yuma newspaper. In California the program was exemplified by active participation at several meetings. A report was made to the Joint Interim Committee of the California State and House Appropriations Committee in July 1957. Addresses were given on three occasions. One talk was given at the Southern California Entomological Club. Other talks were presented at the annual meeting of the Los Angeles County Agricultural Workers, and the annual meeting of the County Deputy Agricultural Commissioners of Southern California. Color slides were presented to interested groups on several different occasions.

RECOMMENDATIONS FOR COMING YEAR

Survey

The present program of trapping and inspection should be continued.

Eradication

It is recommended that the present level of activity in preventive spraying be continued.

Regulatory

Not applicable.

Methods Improvement

Research should continue to support all effort, with special emphasis being directed toward the development of better traps, attrahents, and spray materials.

Other

Continued emphasis should be placed on program servicing.

FIELD ACTIVITIES

Mexican Fruit Fly Control — Fiscal Year 1958

SPRAYING*

Number of properties sprayed	35,560
Number of applications to host trees	237,905
Number of acres brushlands sprayed	250
Aggregate acres brushland sprayed	2,535.5
Number of non-host roadside trees sprayed	67,995

*All applications made by the Bureau of Entomology, California State Department of Agriculture

TRAPPING

Number of traps in use	5,267
Number of properties trapped	5,671
Number of trap servicings	187,114
Number of flies trapped	8*

*Six in host trees - two in brushlands

FRUIT INSPECTION

Number of property visits	64,793
Number of properties found infested	0

STATISTICAL SUMMARY

Mexican Fruit Fly Control

Fiscal Year 1958

State and County A	Visual Inspection		Trapping					Host Plants Sprayed I	Properties Sprayed J	Boxes of Fruit** Treated K
	Properties Inspected B	Properties Infested C	Properties Trapped D	Traps in Use E	Trap Servicings F	Properties Infested G	Flies Caught* H			
Arizona	0	0	25	148	3,848	0	0	0	0	0
California	64,793	0	5,646	5,119	183,266	7	8	237,905	35,560	0
Total from July 1	64,793	0	5,671	5,267	187,114	7	8	237,905	35,560	0

*Indicate by G in parenthesis when flies are gravid. **Equivalent of 70 pound box

PPC 7-10
(Jun-58)

SUMMARY OF ASSOCIATED ACTIVITIES

Mexican Fruit Fly Control

Fiscal Year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul*	Cir.	Infest.Maps & Posters	
Arizona												1 (Feature news story)
California	6	3	3									
Total	6	3	3									1

* Written by Federal personnel for release direct or through cooperators.

** This should be a conservative estimate (accurate record for these items impractical).

EXPENDITURES BY SOURCE AND ACTIVITY

Mexican Fruit Fly Control

Fiscal Year 1958

	1	2	3	4	5	6	7	8
Source of Cash & Equivalent*	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
Plant Pest Control Division	$ 15,138	$	$ 33,297	$ 8,325	$			$ 56,760
Other Organizations (Name)								
Ariz. Comm. Agric. & Hort.	150		500					650
Calif. State Dept. Agric.	10,200	600	40,500	36,500				87,800
Subtotal-Other Organizations	10,350	600	41,000	36,500				88,450
Total (of PPC & Other)	25,488	600	74,297	44,825				145,210
Contributed Services**								
Ariz. Comm. Agric. & Hort.	500		500					1,000
Calif. State Dept. Agric.	3,900				15,544			19,444
Calif. County Depts. Agric.	5,000		15,000	1,000				21,000
Total	9,400		15,500	1,000	15,544			41,444
Grand Total	$ 34,888	$ 600	$89,797	$45,825	$ 15,544			$186,654

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

COOPERATIVE AID RECEIVED

Mexican Fruit Fly Control

Fiscal Year 1958

	1	2	3	4	5	6	7	8
State and Source of Aid	Cash and Equivalent Aid*				Total of Cash & Equivalent	Intangible Service Estimate**	Source Grand Total	Remarks
	Cash	Personal Services	Equipment & Supplies	Space				
Arizona Comm. of Agric.& Hort.		$ 650			$ 650	$ 1,000	$ 1,650	
California State Dept. Agric.		87,800			87,800	19,444	107,244	
California Co. Depts. of Agric.						21,000	21,000	
Total This Period		$88,450			$88,450	$41,444	$129,894	

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

**Limited to services incidental to other activities for which only an estimated value is available.

GPO 977479

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MORMON CRICKET CONTROL

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PROGRAM ANNUAL REPORT
1958 FISCAL YEAR

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

ANNUAL PROGRAM REPORT

MORMON CRICKET

July 1, 1957 - June 30, 1958

Cooperating Agencies:

State Department of Agriculture, Counties,
Local Agencies, and Other Federal
Agencies of Utah, Idaho, Wyoming,
Montana, and Nevada

April 17, 1959
Oakland, California

Jim R. Dutton
Regional Supervisor

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HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

Accomplishment for the Fiscal Year

A total of 73,303 acres of rangeland in five states was treated with bait to control Mormon crickets. An additional 9,595 acres in Idaho which were heavily infested with both Mormon crickets and grasshoppers were sprayed with excellent results in controlling both pests; this acreage was included in our grasshopper control report and accomplishments. Privately-owned lands accounted for 6,995 acres of the treated areas and the balance, 66,308 acres, was federally managed land. Federal lands involved were principally those of the Bureau of Land Management and the Forest Service.

Major Deviation from Work Plan

In most instances deviations from planned work were occasioned by the non-appearance of economic infestations in areas where expected. In Idaho preparations were made to treat 60,000 acres, but the infestation did not develop as predicted. On 2,000 acres in Utah some crickets appeared, but not in numbers that would justify control. In Wyoming the lack of response on the part of landowners prevented control on 6,000 acres.

On the other hand, it was necessary to bait nearly 600 acres in Pershing County, Nevada, to stop migrations of Mormon cricket bands that were not known to exist until discovered during the mid-summer adult survey. Likewise, the infestation that was discovered in Powell County, Montana, and controlled, was not anticipated because of the lack of survey personnel to adequately cover the area the previous year.

Status of Program at Close of Year

Over 100,000 acres of rangeland were known to be infested in the six states - Colorado, Idaho, Montana, Nevada, Utah, and Wyoming. Only about half of the known area was severely infested, but, depending upon weather conditions and other factors influencing the development of the insects, this situation can be radically different by the spring of 1959.

A large part of the estimated bait needs for fiscal year 1959 are in storage and will be immediately available for use when required.

PROGRAM ACTIVITY DURING FISCAL YEAR

Planning and Direction

Program activities were planned by Division personnel in cooperation with State officials and with the assistance of representatives from cooperating counties and other federal agencies. Field direction of the program was usually the responsibility of Division supervisors, although in a few instances State personnel shared this function.

Technical Assistance

Mormon cricket control is usually undertaken on an organized basis, and there is little or no call for technical assistance to individuals. Division supervisors and State and Extension Entomologists do advise ranchers, livestock associations, and others with regard to cricket infestations and control needs.

Survey

Nymphal and adult surveys are made to locate and evaluate infestations of Mormon crickets. The former are made in the spring and serve as the final determination as to the advisability of control. Adult surveys are made in the summer and are used in planning control work for the following season. Standard techniques are followed in making both surveys and essentially they consist of recorded observations on population densities.

During the fiscal year surveys were made in parts of Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

No cultivated crops were reported to have been destroyed by Mormon crickets. Some damage was done to rangeland in several states. It was estimated that Idaho ranges were damaged to an extent valued at $17,500.00. In other states the damage was less extensive. Control programs protected over 150,000 acres of range from possible cricket damage.

Control

Procedures or Techniques Used

The standard method used to control Mormon crickets consists of aerial or ground application of a bait composed of steamed rolled wheat impregnated with an oil solution of aldrin, at the rate of two ounces of aldrin to each one hundred pounds of wheat. Occasionally, as was the case in western Idaho, crickets may be found in areas also infested with grasshoppers. At such times both insects may be controlled through the application of insecticidal sprays.

Control work is generally completed before the end of June, but one area in Fremont County, Idaho, was not started until late summer and was finished in August. Excellent results were obtained in all areas except one. In Powell County, Montana, the bait used was from a supply that had been held over for at least one season and, although the results were finally satisfactory, the kill was quite slow in materializing. This is not a usual circumstance with old bait, and the above incident may or may not be attributed to that factor.

The total acreage controlled, 73,303, was somewhat less than that on which work should have been done, but was all that was possible with the landowner attitude being what it was.

Regulatory

No regulatory measures were required in this program. At times State authorities do force control under appropriate State laws, but that was not necessary this season.

Methods Improvement

Baits consisting of steamed rolled wheat impregnated with oil-aldrin solution have given exceptional control under all conditions. Their efficiency can hardly be improved, but there is always the hope of obtaining a cheaper material. Likewise, applying bait on large infested and remote areas by aircraft, or in small scattered infested areas by ground equipment, is satisfactory but does not preclude our continued alertness to better, more economical methods of application.

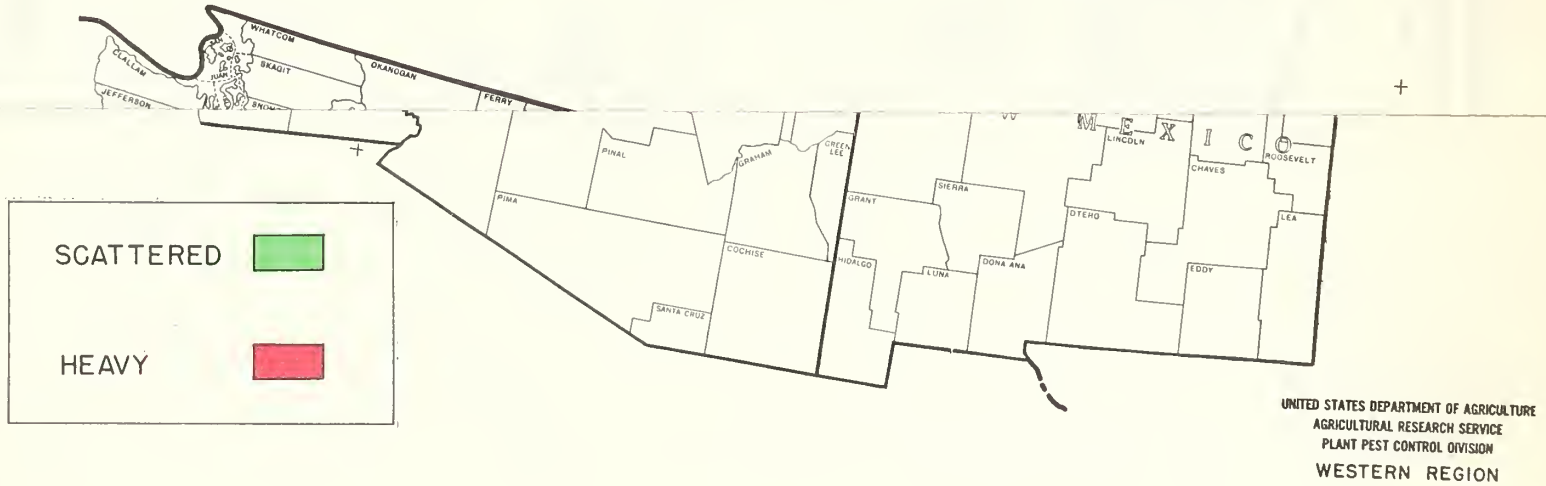
Other

The major share of cooperative funds provided is by the State Department of Agriculture in the several states participating. In cases where control is accomplished on Federal domain, the land managing agency concerned usually contributes services and other similar assistance. Extension Service personnel provide a great deal of assistance in disseminating information on the program and in organizational work, aiding in surveys and providing storage for materials through County Commissioners.

RECOMMENDATIONS FOR COMING YEAR

Continued vigilance in surveying all known Mormon cricket areas must be maintained each year to obtain knowledge of cricket population intensities and movement of bands, and applying baits when necessary to prevent outbreak "build-ups." This "prophylactic" survey and control operation saves many dollars in operational costs and prevents extensive loss of valuable forage, and should continue as in the past with but minor deviations or changes as conditions demand.

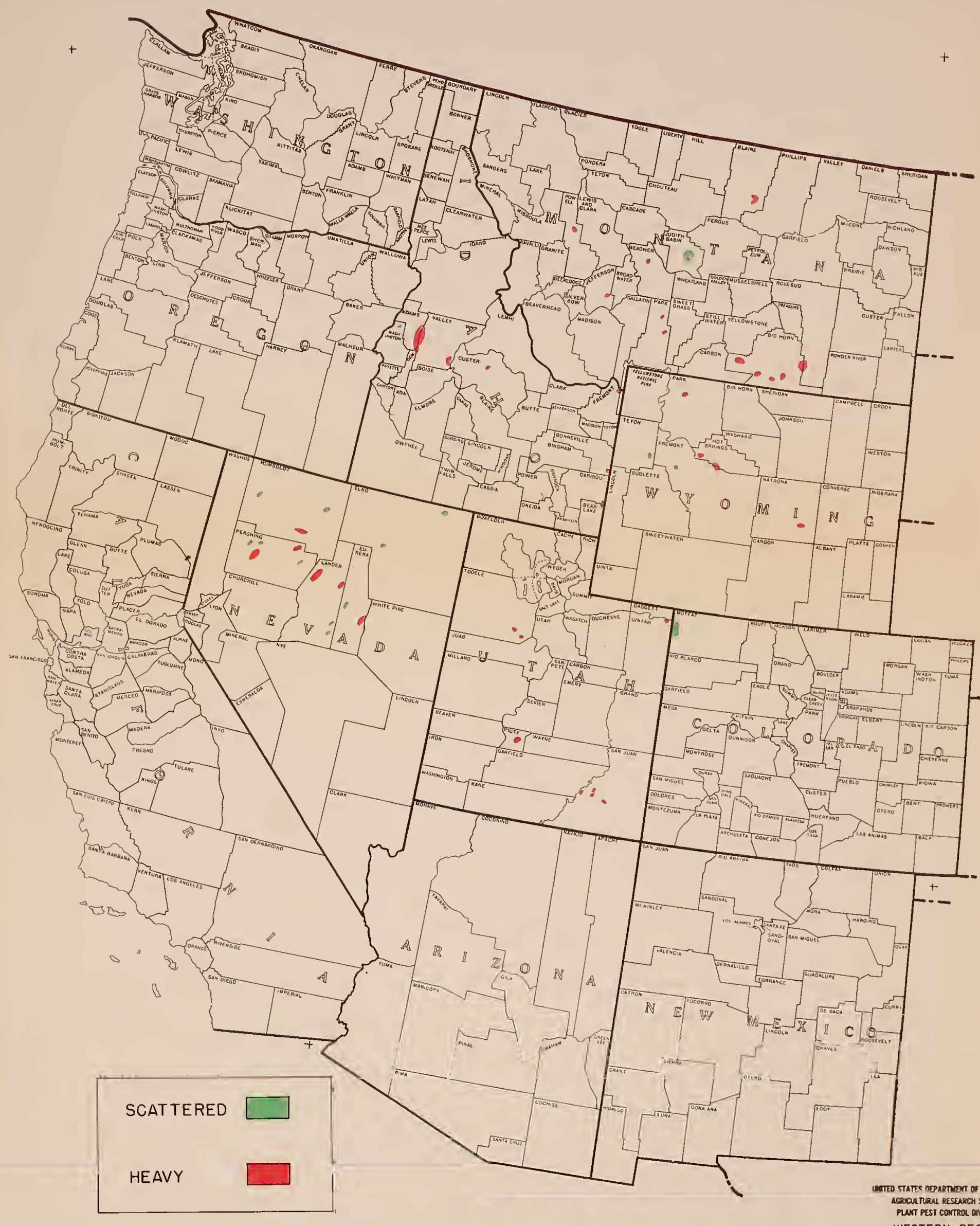
MORMON CRICKET ADULT SURVEY - FALL 1957



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

GPO 975119

MORMON CRICKET ADULT SURVEY - FALL 1957

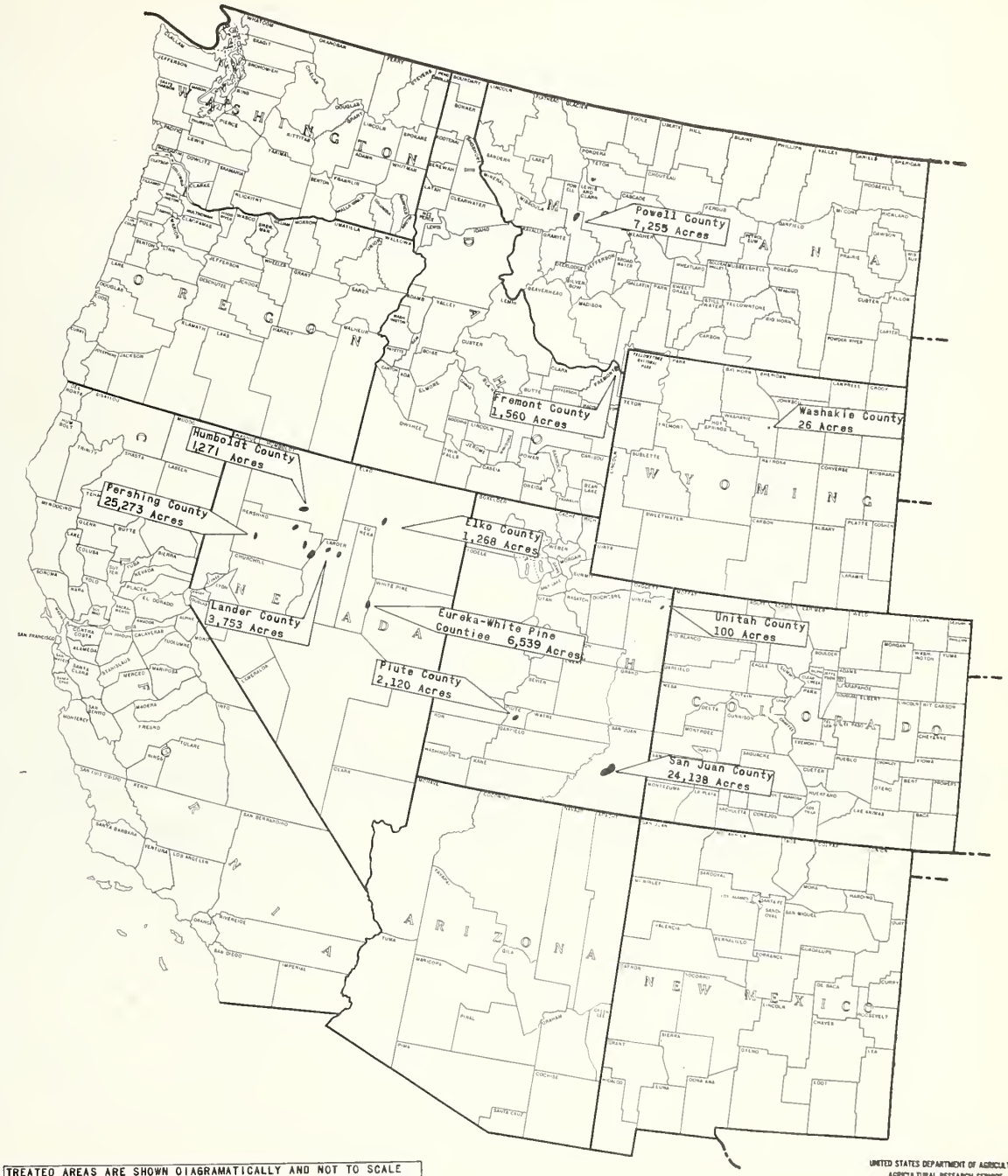


UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

GPO 975119

RANGELAND MORMON CRICKET CONTROL

LOCATION & SIZE OF AREAS COOPERATIVELY TREATED FISCAL YEAR 1958



TREATED AREAS ARE SHOWN DIAGRAMATICALLY AND NOT TO SCALE BECAUSE OF SMALL NUMBER OF ACRES INVOLVED IN SOME COUNTIES. ACTUAL TREATED ACREAGES ARE SHOWN ON LEGENDS.

TOTAL ACRES TREATED - 73,303

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OCTOBER 8, 1958

GPO 977221

COOPERATIVE RANGELAND CONTROL ACCOMPLISHMENTS
DURING FISCAL YEAR 1958

Mormon Cricket

State	Private and State Lands (Acres)	Federal Lands (Acres)	Total Acreage
Idaho		1,560	1,560
Montana	6,895	360	7,255
Nevada		38,104	38,104
Utah	100	26,258	26,358
Wyoming		26	26
Totals	6,995	66,308	73,303

JUNE STATISTICAL REPORT
MORMON CRICKET
Including Cumulative Control Data for Fiscal Year 1958

Region: Western | Prepared by: WPPCH

Period (Designate: Month, 1-15, 16-31, or 1-31): June 1 - 30, 1958 (Final Report) | Date prepared: 10/14/58

COUNTY OR LOCATION A	STATUS First of Period B	INFESTED ACRES* State & Private C	INFESTED ACRES* Public Domain** D	INFESTED ACRES* Total Acreage E	ACRES Scheduled for Treatment F	ACREAGE TREATED State & Private G	ACREAGE TREATED Public Domain** H	ACREAGE TREATED Total Acres I	STATUS End of Period J
						(Controlled with Fiscal Year 1958 Funds)			
Colorado	5,000	0	5,000	5,000	5,000	0	0	0	5,000
Idaho	71,500	4,000	67,500	71,500	38,000	0	1,560	1,560	69,940
Montana	213,000	60,895	155,360	216,255	8,000	6,895	360	7,255	209,000
Nevada	84,500	0	84,500	84,500	54,000	0	37,509	37,509	30,500*
Utah	29,000	0	29,000	29,000	27,000	0	26,358	26,358	2,000*
Wyoming	9,780	35,000	8,780	43,780	0	0	0	0	43,780
Total This Period	412,780	99,895	350,140	450,035	132,000	6,895	65,787	72,682	360,220
Total From July 1	XXX	XXX	XXX	XXX	XXX	6,895	66,408	73,303	XXX

*Any minus figure must be explained.

**Identify ownership by Department, i.e., BLM, Forest Service, etc.

*Revised estimate of residue.

PPC 7-11 (Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

COOPERATIVE RANGELAND CONTROL OPERATIONS
ACREAGES CONTROLLED - AND COSTS

Mormon Cricket

Fiscal Year 1958

State and Location	Period of Control Operations	Acreage Baited		Total Acres Treated	Costs			Total Cost	Average Cost Per Acre
		Contract Aircraft	Ground Equipment		States, Counties, & Landowners	Other Co-operating Fed. Agcys.	Plant Pest Control Division		
Idaho									
Fremont County	6/27-8/6	1,560		1,560	$ 426.98	$	$1,086.39	$1,513.37	$.9701
Montana									
Powell County	6/14-15	7,255		7,255	2,920.26		1,688.83	4,609.09	0.6353
Nevada									
Pershing Co.	7/57		595	595					
	6/58	25,053		25,053					
Humboldt Co.	6/58	1,146		1,146					
Lander Co.	6/58	3,753		3,753					
Eureka-White Pine Cos.	6/58	6,289		6,289					
Elko Co.	6/58	1,268		1.268					
Total		37,509	595	38,104	$3,950.00	$400.00	$50,818.60	$55,168.60	$1.4478
Utah									
Piute Co.	7/7	2,120		2,120					
San Juan	6/20-7/6	24,138		24,138					
Uintah	6/18-19		100	100					
Total		26,258	100	26,358	$ 50.00	$1,439.40	$19,360.97	$20,850.37	$0.7912
Grand Total		72,582	695	73,277*	$7,347.24	$1,839.40	$72,954.79	$82,141.43	$1.1209

*Not included:
9,595 acres in Idaho, controlled by spraying in conjunction with grasshopper control.
26 acres in Wyoming ground baited on BLM lands, making total of 73,303 baited acres.

EXPENDITURES BY SOURCE AND ACTIVITY

Mormon Cricket

Fiscal Year 1958

	1	2	3	4	5	6	7	8
Source of Cash & Equivalent*	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
Plant Pest Control Division	$31,354.21	$7,630.00	$18,707.11	$53,382.55		$750.00	$696.02	$112,519.29
Other Organizations (Name)								
States & State Depts. Agric.	445.00	250.00		6,158.43			100.00	6,953.43
Ranchers				2,161.81				2,161.81
USDI-BLM	150.00		240.00	620.40			84.00	1,094.40
Subtotal-Other Organizations	595.00	250.00	240.00	8,940.64			184.00	10,209.64
Total (PPC & Other)	31,949.21	7,880.00	18,947.11	62,323.19		750.00	880.02	122,729.53
Contributed Services**								
U.S. Forest Service			140.00	200.00			150.00	490.00
BLM			155.00	100.00			150.00	405.00
Ranchers			250.00	200.00				450.00
Extension Service	200.00							200.00
States			50.00					50.00
Counties			100.00					100.00
Total Contributed Svcs.	200.00		695.00	500.00			300.00	1,695.00
Grand Total	$32,149.21	$7,880.00	$19,642.11	$62,823.19		$750.00	$1,180.02	$124,424.53

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activites for which only an estimated value is available.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
CENTRAL REGION

ANNUAL PROGRAM REPORT

PEACH DISEASES

July 1, 1957 - June 30, 1958

In Cooperation With Other
Federal, State, County and Local Agencies

November 14, 1958
Minneapolis, Minn.

R. O. Bulger
Regional Supervisor

TABLE OF CONTENTS

I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITIES

A. Accomplishment for the fiscal year

Peach orchards in Dunklin County, Missouri, were inspected for phony peach this year. No inspection was made for this disease in Illinois and Kentucky orchards.

Peach mosaic has not been found in the Central Region, but Stark's Nursery at Louisiana, Missouri, and the Neosho Nursery at Neosho, Missouri, were inspected. That portion of Stark's Nursery which is on the Illinois side of the Mississippi River was also inspected.

B. Major deviation from work plan

None

C. Status of program at close of year

During the fiscal year 1957, Johnson, Massac, Pulaski, and Union Counties in Illinois had been inspected for phony peach disease. At that time there were 6 properties of the 44 inspected on which it was necessary to remove and destroy 17 trees. No orchard inspections were made in Illinois during the current fiscal year. Twelve orchards were inspected in Dunklin County, Missouri, this year for phony peach disease and no infected trees were found. Kentucky has had no phony peach disease reported since 1939.

The peach mosaic inspections were carried on in the Neosho and Louisiana, Missouri, areas and across the river from the latter site in Illinois. No evidence of the disease was found. No inspections were made for this disease in Kentucky.

II. PROGRAM ACTIVITY DURING FISCAL YEAR

A. Planning and direction

The planning and direction of the peach diseases program is the joint responsibility of the State Departments of Agriculture and the Plant Pest Control Division in the three-state area.

B. Technical assistance

Program personnel provide the peach growers with essential information regarding peach diseases. They also inspect orchards and supervise the removal of infected trees.

Cooperating personnel provide technical assistance to the program by supplying information concerning the diseases, make laboratory facilities available for specimen examination, and assist with the inspection of orchards and nurseries.

C. Survey

Orchards are inspected for phony peach during October by a crew of trained men. Suspected trees are noted by observing symptoms of the disease. Peach mosaic inspection is made by a trained crew in the spring as soon as the trees leaf out. This is the best time of the year to observe the symptoms of this disease.

A total of 16,000 peach trees in 12 orchards in Dunklin County, Missouri, was inspected for phony peach disease. No infected trees were found.

In Missouri 478,148 trees at Stark's Nursery and 18,600 trees at the Neosho Nursery were inspected for peach mosaic. No diseased trees were found in either nursery.

D. Eradication or control

Trees infected by either of the two diseases are cut down and all branches, debris, and stumps are carefully destroyed by burning.

No infected peach trees were found this year in the Region so control measures were not necessary.

E. Regulatory

Dunklin County, Missouri, and Jackson, Massac, Pulaski, and Union Counties in Illinois are currently under phony peach regulations of the respective states. No states in this Region have any areas under quarantine for peach mosaic.

No new regulated counties are anticipated.

F. Methods improvement

None

G. Other

State Departments of Agriculture assisted Plant Pest Control personnel by preparing maps and historical information of regulated areas and in Missouri by helping with the phony peach inspection. This assistance reduced the Federal manpower needed to accomplish the end results.

The cooperation of this agency in the respective states was very good.

Associated activities and services - Federal personnel in Missouri attended meetings, gave one talk, and showed slides pertaining to peach diseases.

III. RECOMMENDATIONS FOR COMING YEAR

The peach orchards in Dunklin County, Missouri, will be inspected for phony peach. No cooperative inspection work is planned for the fiscal year 1959 in Illinois and Kentucky.

The annual inspection of trees for peach mosaic will be made in the nurseries in Missouri.

Status - Phony Peach Disease

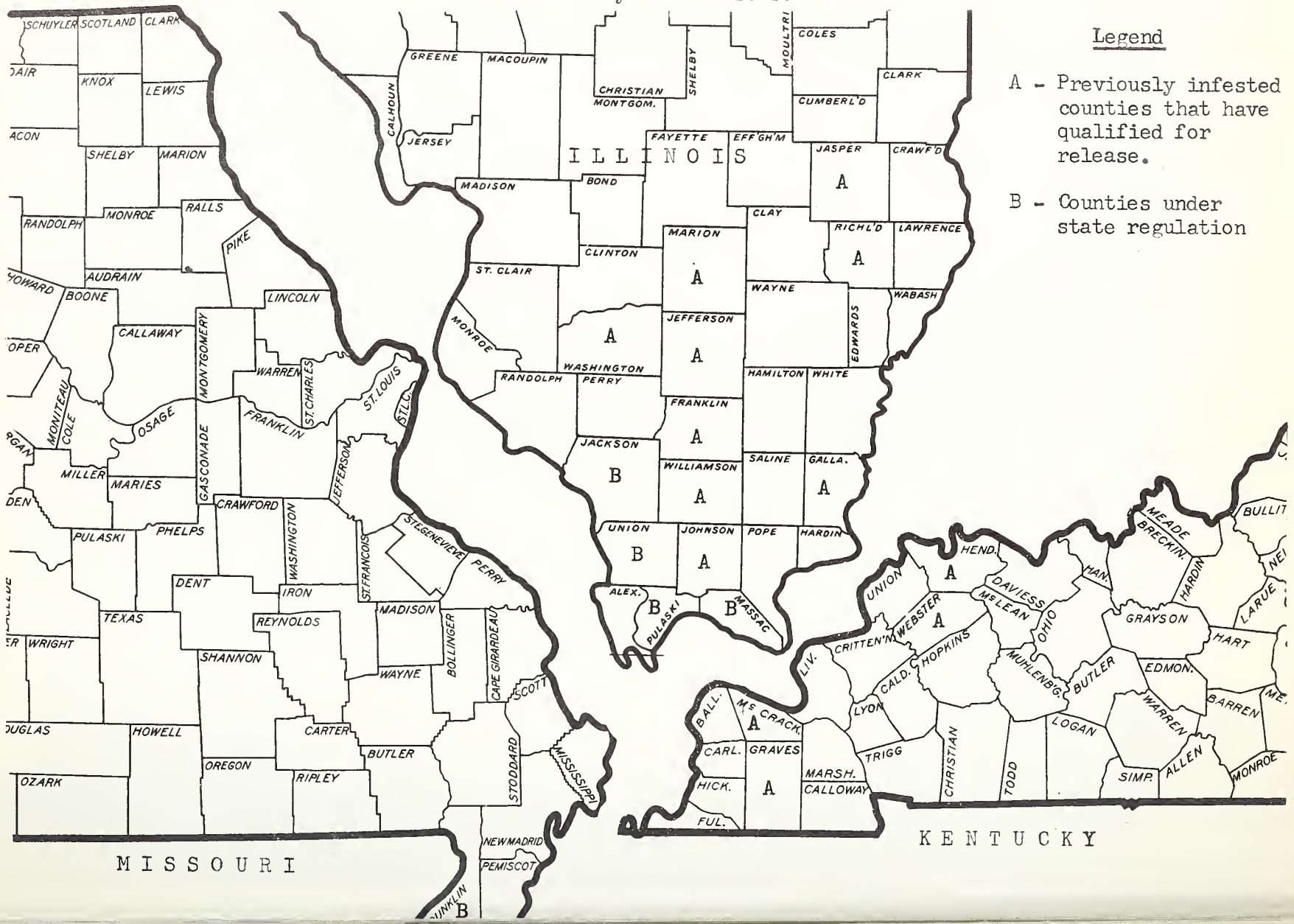


Table 1. Peach Diseases - Accomplishments Fiscal Year 1958

Peach Mosaic

State	PROPERTIES			TREES			
	Inspected		Diseased	Inspected		Diseased	Removed
	Initial	Repeat		Initial	Repeat		
Missouri	0	4	0	490,098	6,650	0	0

Phony Peach

State	Number Properties		Number Trees		
	Inspected	Diseased	Inspected	Diseased	Removed
Missouri	12	0	16,000	0	0

Table 2. - Summary of Associated Activities - Fiscal Year 1958 - Peach Diseases

State	Public Meetings Attended	Presentations: Talks	Presentations: Slides	Presentations: Films	Presentations: Radio	Presentations: TV	Feature & News Stories*	Extent These Aids Were Used**: Exhibits	Extent These Aids Were Used**: Bulletins*	Extent These Aids Were Used**: Circulars*	Extent These Aids Were Used**: Infest. Maps & Posters	Special Reports
FEDERAL:												
Illinois	0	0	0	0	0	0	0	0	0	6	0	0
Missouri	1	1	1	0	0	0	0	0	15	0	0	0
Total	1	1	1	0	0	0	0	0	15	6	0	0
COOPERATORS:												
Illinois	0	0	0	0	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1	1	1	0	0	0	0	0	15	6	0	0

*Written by Federal personnel for release direct or through cooperators.
**Conservative estimate.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

PEACH MOSAIC

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

Peach mosaic inspections were made during the fiscal year in Arkansas, Oklahoma, and Texas. In Arkansas, an inspection was made of the Nashville peach growing section in the southwest part of the state. The primary concern in Oklahoma was the certification of nursery stock in Bryan County, in the southern part of the state, although surveys were made in other localities of the state to detect possible incipient infestations. Texas inspections were made in eight infested or previously infested counties and in three counties where mosaic has never been found. Infection was found for the first time in Freestone County.

B. Major deviation from Work Plan

None.

C. Status of program at close of year

In Arkansas three infected trees were found on one property in Howard County. In Oklahoma, the infestation status changed very little from that of the previous year. There was some increase in infection in Cherokee and Camp Counties and some decrease in Smith and Upshur Counties in Texas; but for the state, the degree of infection dropped from the .08 percent found in 1957 to .04 percent in 1958.

II. Program Activity during fiscal year

A. Planning and Direction

Prior to the beginning of the inspection programs for the season, conferences were held by representatives of the cooperating state and federal agencies, and plans were made as to the areas to be worked and personnel to be provided by each agency.

In general, it was agreed to confine the inspections to nurseries and budwood sources and their environs and the commercial orchards in the principal peach growing sections. As in previous years, all inspections were made by Division and State inspectors located within the area to be worked, and detailed supervision of the program was assigned to the Federal and State District Leaders in the area.

B. Technical Assistance

Technical assistance as well as new information on the disease is provided to nurserymen and growers each year through contacts by inspectors and county agents and through the distribution of bulletins. Plant Pathologists of the universities and colleges of the affected states cooperate in the planning of the program and assist in identification of infected trees where necessary.

C. Survey

1. Procedures or techniques used

a. Nursery and orchard owners are contacted prior to the inspection. Crews of Division and State inspectors, usually two to a crew, inspect nurseries, budwood sources and their 1-mile environs, and commercial orchards. Jeeps are used as far as is possible in inspecting the larger orchards while the nurseries and smaller orchards are walked out.

2. Accomplishments

Detection surveys were made in Alfalfa, Cherokee, Muskogee, and Woods Counties in Oklahoma, but no evidence of mosaic infection was found. In Texas, surveys discovered an infestation in Freestone County.

3. Statement or table of pest damage

The value of the trees destroyed and their potential production constitutes the pest damage.

D. Eradication or Control

1. Procedures or techniques used

Orchards are inspected in the same manner as described under survey procedures. Mosaic infected trees are destroyed by the growers. Usually the trees are delimbed at the time of inspection and the stumps are pulled later.

2. Accomplishments

Inspections for peach mosaic in Arkansas was conducted in five counties involving 213 properties with 258,478 trees; three diseased trees were found on one property. In Oklahoma, 1,888 trees on 397 properties were inspected; and 65 trees on 16 properties were found infected with mosaic. In Texas, 282,071 trees were inspected on 456 properties in 13 counties, with 137 trees found infected and removed on

71 properties in 7 counties. The three infected trees found in the Nashville, Arkansas, area also were removed.

E. Regulatory

1. Procedures or techniques used

The objective of the regulatory phase of the program is to prevent spread of the disease to noninfested sections, and particularly to other counties and states.

The disease is readily spread to nursery stock through the medium of infected buds; therefore, the inspection and certification of budwood sources is essential in the nursery certification procedure. All nurseries and all budwood sources and the 1-mile environs of each are inspected each year and all diseased trees removed. Certificates authorizing the movement of nursery trees and budwood are not issued for one year following the finding of the disease within a nursery or budwood block or immediately adjacent thereto.

2. Accomplishments

In Arkansas, inspections were made of 11 nurseries with 655,200 trees; also, 12 budwood sources with 134,207 orchard and nursery trees were inspected and one failed to meet certification requirements.

In Oklahoma, the Durant Nursery at Durant and the Texas Nursery Company at Colbert, both in Bryan County were inspected. In the Durant Nursery environs, three infected trees were found and removed. This nursery produces its own budwood. In the environs of the Texas Nursery Company, 22 infected trees were found and removed. One nursery, including its environs, and one property were checked in Woods County, with negative results. Inspections were made in Johnston County on 11 properties, and seven of these had 40 infected trees. Outside the regulated areas, inspections were made in Cherokee and Muskogee Counties, but no mosaic was found.

In Texas, 331,400 trees in 11 nurseries of 5 regulated counties, and 5 nurseries in 2 counties outside the regulated area were inspected and approved. Eleven budwood sources in 7 counties were inspected and approved.

F. Methods Improvement

1. Work Performed

Jeep trucks were used to good advantage in inspecting the larger orchards which greatly increased the per day inspection coverage without loss of effective disease diagnosis.

2. Accomplishments

By using the "jeep method" of inspection, a much wider coverage of peach growing areas was made than heretofore has been possible.

G. Other

1. Cooperation received during fiscal year

Cooperating state agencies have assisted in the planning and direction of the program and have furnished an equitable number of inspectors for the surveys. Nurserymen and a great majority of the growers are glad to participate in the program by removing any diseased trees. Nurserymen abide by the regulations concerning budwood and nursery stock.

2. Associated activities and services

The state departments of agriculture and county agents assist in keeping nurserymen and orchardists informed regarding the disease, its control and the quarantine regulations. Enforcement of the quarantine is by state authority.

III. Recommendations for coming year

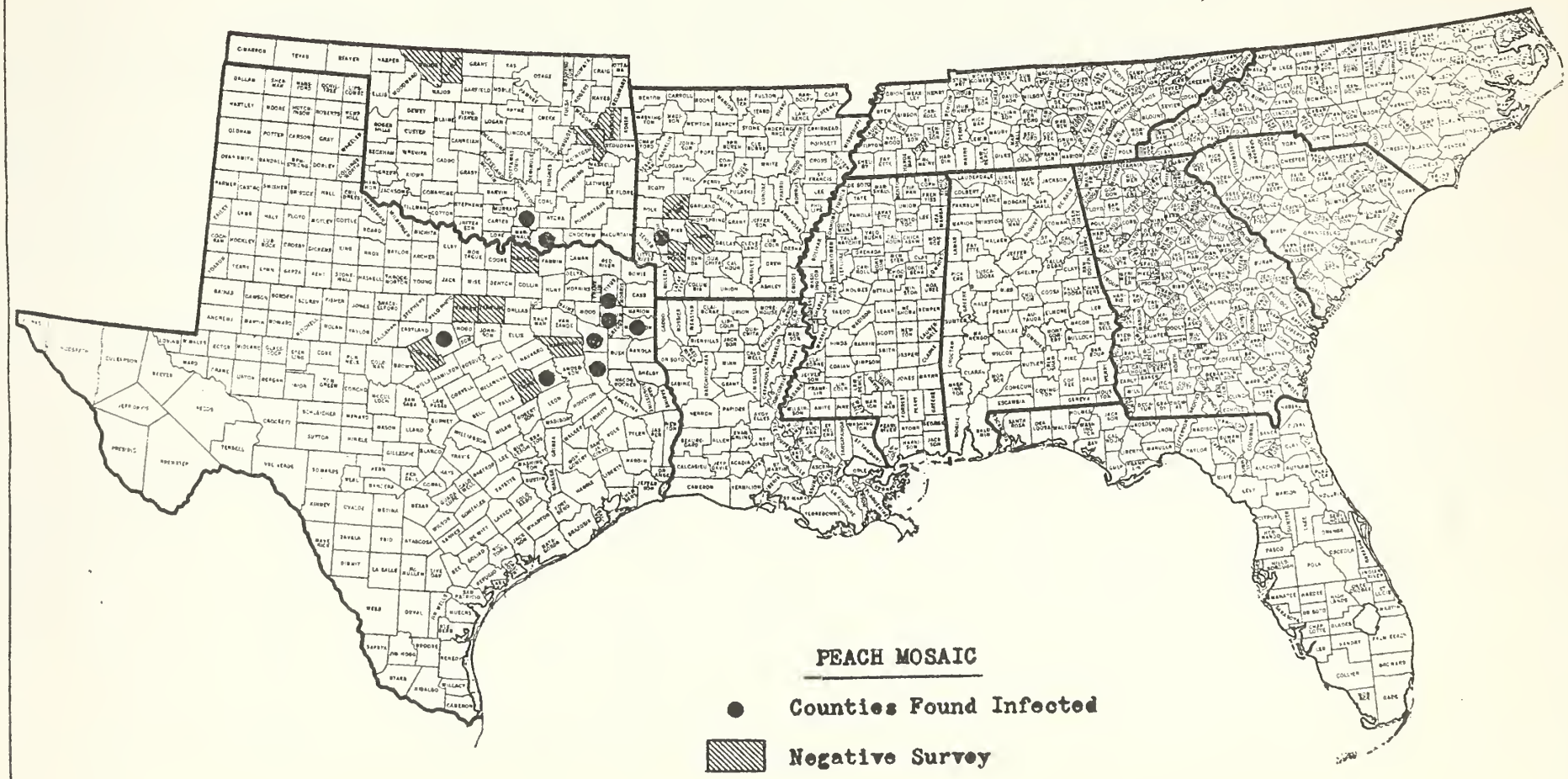
Survey should be continued on at least its present basis with the possibility of expansion so that the entire peach sections of the infected states might be inspected on a progressive basis.

The destruction of infected trees as found should be continued. Plums, both wild and cultivated, are symptomless carriers of the virus. The cultivation of the Bruce plum in the regulated area of east Texas is increasing; consequently, removal of infected peach trees to eradicate the disease in orchards where both peaches and plums are being grown commercially is not accomplishing eradication or prevention of spread, and it is recommended that the commercial inspections in that area be discontinued, but that the nursery environs inspections be continued.

It is believed that regulatory measures should be continued on their present basis. It is recommended that the Methods Improvement Section study the possibility of improving the survey and detection methods so that incipient infections may be more readily recognized.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



PEACH MOSAIC NURSERY INSPECTIONS

- Regulated Area -

STATE	Number Counties	Number Nurseries	Number Nursery Trees	Environs Inspections			
				Properties		Trees	
				Inspected	Infested	Inspected	Infested
Oklahoma	1	2	77,500	357	9	1,606	25
Texas	5	11	233,300	154	0	3,523	0
Totals	6	13	310,800	511	9	5,129	25

PEACH MOSAIC NURSERY INSPECTIONS

- Non-Regulated Area -

STATE	Number Counties	Number Nurseries	Number Nursery Trees	Environs Inspections			
				Properties		Trees	
				Inspected	Infested	Inspected	Infested
Arkansas	3	11	655,200	80	0	7,902	0
Oklahoma	2	3	527,300	12	0	128	0
Texas	2	5	98,100	11	0	451	0
Totals	7	19	1,280,600	103	0	8,481	0

BUDWOOD SOURCES AND ENVIRONS INSPECTIONS

STATE	Number of Counties	Number Budwood Sources Inspected	Number Budwood Trees Inspected	Number Budwood Sources with Mosaic	Number Infected Trees in JW Block	ENVIRONS INSPECTIONS				Number Mosaic Infected Trees Removed by May 15, 1958
						Properties		Trees		
						Number Inspected	Number Affected	Number Inspected	Number Infected	
Arkansas:										
Reg. Area	1	2	14,560	0	0	10	1	66,400	3	0
Non-reg. Area	3	10	119,647	0	0	81	0	8,126	0	0
Total	4	12	134, 207	0	0	91	1	74,526	3	0
Oklahoma:										
Reg. Area	1	2	7,580	0	0	152	1	657	3	3
Non-reg. Area	0	0	0	0	0	0	0	0	0	0
Total	1	2	7,580	0	0	152	1	657	3	3
Texas:										
Reg. Areas	7	11	160,200	0	0	151	0	5,771	0	0
Non-reg. Area	2	4	49,300	0	0	10	0	445	0	0
Total	9	15	209,500	0	0	161	0	6,216	0	0
GRAND TOTAL	14	29	351,287	0	0	404	2	81,399	6	3

PEACH MOSAIC

Region: Southern

Prepared by:

Period (Designate Month, 1-15, 16-31, or 1-31): Fiscal Year 1958

Date prepared:

STATE AND COUNTY A	PROPERTIES Inspected Initial B	PROPERTIES Inspected Repeat C	PROPERTIES Diseased D	TREES Inspected Initial E	TREES Inspected Repeat F	TREES Diseased G	TREES Removed H
Arkansas	213	0	1	258,478	0	3	3
Oklahoma	397	0	16	1,888	0	65	25
Texas	456	2	71	282,071	2,200	137	137
Total this period	1,066	2	88	542,437	2,200	205	165
Total from July 1							

PPC 7-17
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Peach Mosaic

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Texas	1	1	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	0	0	0	0	0	0

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

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PEACH MOSAIC

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PROGRAM ANNUAL REPORT
1958 FISCAL YEAR

• • •

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

_____

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

ANNUAL PROGRAM REPORT

PEACH MOSAIC

July 1, 1957 - June 30, 1958

Cooperating Agencies:

State Departments of Agriculture
of the States of California,
Colorado, Utah, and New Mexico

October 30, 1958
Oakland, California

Jim R. Dutton
Regional Supervisor

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HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

Accomplishment for the Fiscal Year

Inspection results for the fiscal year in the control area comprising parts of the States of California, Colorado, and Utah are exceedingly gratifying. Only 2,903 mosaic trees were found, which represents a drastic reduction over the 8,571 found in the above states during the fiscal year 1957. This shows a reduction over 1957 of 70 percent in California and 60 percent in Colorado. In Utah there was a slight increase in the disease incidence in 1958 over 1957. This year's findings represent one of the lowest incidence of the disease in the entire history of the program.

Major Deviation from Work Plan

There were no major deviations from the Work Plan; however, the inspection in Fresno, Kern, Kings, and Tulare Counties, California was extended one week beyond the scheduled two weeks. This was due to delayed foliation in peach areas of Riverside and San Bernardino Counties. Delayed foliation is caused by warm winters, when peach trees do not get the required number of hours of cold weather for complete dormancy.

Status of Program at Close of Year

There were no new areas found infected with peach mosaic disease during the fiscal year. All diseased trees found were destroyed. State cooperation was very satisfactory. Growers participated in the program by removing from their orchards the brush and stumps of the diseased trees and by removing many peach trees tolerant to peach mosaic, thus aiding the control effort.

PROGRAM ACTIVITY DURING FISCAL YEAR

Planning and Direction

How planned and directed

In planning the program activities, a tentative annual work program was prepared by local, state, and federal field supervisors. This tentative plan was then discussed at a meeting of the cooperating

agencies, at which time modifications were made to the satisfaction of all cooperators. The local, state, and federal field supervisors were responsible for the work to be accomplished and for periodic progress reporting to the cooperating agencies.

Technical Assistance

Technical assistance provided to farmers and others by program personnel

Trained inspectors assigned to the program search through peach orchards and adjacent dooryard plantings to find and diagnose peach mosaic infection on individual trees. Pathologists are available to identify difficult or doubtful cases. This service is provided to commercial orchardists and to anyone having peach trees -- regardless of number. The objective here is to provide growers with the best available detection and diagnostic advice and services.

Technical assistance provided to program by cooperating agencies

Close working relations are maintained with USDA Entomology Research and with State and USDA Pathology Research agencies. Some additional surveys were made by Entomology Research to obtain information on distribution of peach mosaic mite vector. Buds taken from mosaic suspect trees were budded into normal nursery trees by Entomology Research personnel to assist program personnel in peach mosaic diagnosis. Buds from suspect peach mosaic infected trees in West Virginia were budded into virus-free nursery trees by Pathology Research to determine possible presence of peach mosaic disease. Readings from these transmission tests will not be complete until the spring of 1959. These are some of the services provided to the program year after year by the cooperating research agencies. Other long-range programs of these agencies deal with vector control studies in which systemic insecticides are used; studies of various strains of the peach mosaic virus; and studies which test susceptibility or tolerance of new peach varieties. This type of technical assistance is essential to the success of the control program.

Survey

Procedures or techniques used

Field

A survey for peach mosaic disease is a tedious undertaking. Each peach tree in a control area must be closely examined for peach mosaic symptoms. Diagnostic symptoms include short internodes, bumpy fruit, delayed foliation, and mottling which crosses the veins in the leaf. The symptom most relied upon used by inspectors is mottling in the leaf. Inspection should be made during the early part of the growing season, beginning when some leaves are fully developed and extending for a period of two to three months. Mosaic leaf symptoms are most conspicuous at this time. Later, with the approach of summer and hot weather, symptoms become masked and sometimes disappear.

For the program to be effective, surveys must be conducted annually and be followed by approved eradication measures. During this fiscal year inspections were made in Delta, Mesa, and Montezuma Counties, Colorado; Grand County, Utah; and Fresno, Kern, Kings, Tulare, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties in California. In addition to the above-inspected areas, the Bureau of Plant Pathology of the California State Department of Agriculture, in cooperation with theCounty Agricultural Commissioners, makes observations for peach mosaic in connection with yellow leaf roll and yellow bud mosaic inspections in the Counties of Butte, Fresno, Merced, Napa, Placer, Solano, Stanislaus, Sutter, Tehama, Yolo, and Yuba. On these surveys 3,380,483 trees were examined.

In the peach mosaic infected areas, commercial peach areas were inspected in Riverside and San Bernardino Counties, California. Also

inspected were the environs of experimental plots in Moreno Valley in Riverside County and the Barstow-Victorville desert areas in San Bernardino County. In 1955 one mosaic infected tree was found near Hinkley in San Bernardino County and thus, annual inspections are being made in that desert area. In Los Angeles County the Valyerma area was inspected. One mosaic tree was found there in a commercial orchard in each of the years 1955, 1956, and 1957.

A barrier zone in California has been established two to three miles wide along the western boundary of the peach mosaic quarantined area, extending from the San Gabriel Mountains on the north to the Pacific Ocean on the south. The lower half of this barrier zone was inspected this year. This now gives one complete inspection in this zone, the upper half having been inspected in 1957. In San Diego County the commercial orchards and adjacent properties were inspected. These orchards are scattered throughout the central and eastern part of the county from the Riverside County line to the Mexican Border.

Colorado activities were centered in Mesa County, the main commercial peach area of the State. Commercial plantings and previously infected areas were inspected in Delta County. Some survey for the disease was conducted in McElmo Canyon, Montezuma County, which revealed that the disease was doing severe damage throughout the peach plantings in the Canyon. This area is of only minor importance in the commercial production of peaches. Approximately 15 percent of the trees examined in McElmo Canyon were infected with peach mosaic disease. This survey was for informational purposes only, as there is no attempt at control of the disease in this isolated area.

Considering the rather light incidence of the disease this season in Mesa County, Colorado,

it is somewhat surprising that in certain areas there was considerable grower resistance to the program. However, in only one instance was it necessary for the State to serve a legal notice, which resulted in prompt grower compliance. It was necessary to call the provisions of the State Peach Mosaic Act to the attention of a number of growers before they would remove the mosaic trees from their property.

Cooperative peach mosaic activities in Utah were centered in the Moab area of Grand County. This is a small peach area involving approximately 15,500 peach trees. Two inspections were made, and 16 mosaic trees found.

Control

Procedures or techniques used

Peach mosaic is a virus disease. Virus diseases are deep-seated in the host. Control measures consist of complete destruction of infected host plants. In the control of peach mosaic disease, infected trees are delimbed. The stump should be removed promptly; however, it is permissible to treat the stump with either ammate or Esteron 245. When ammate is used, the trunk is girdled just above the ground level and the ammate crystals applied in the girdle. Esteron 245 is used at the rate of 1-3 with light diesel oil, and the limb cuts at the trunk are painted with this material.

Natural spread of peach mosaic disease is by a microscopic mite *Eriophyes insidious*. This mite lives under the bud scales and is seldom found elsewhere on the host plant. It is believed that the mite is carried from tree to tree by wind currents. The virus may also be moved by man over wide distances through the movement of infected nursery stock or budwood.

Research is investigating various miticides, making field tests to determine their effectiveness in the control of the mite. When an effective miticide is found for the vector of peach mosaic, then another tool will be available for control of this disease.

Accomplishments

Through annual control programs, the incidence of peach mosaic has been reduced from a high of

approximately 6 percent in 1935 to less than one-fifth of 1 percent in 1958. In California there was a reduction in 1958 over 1957 in peach mosaic incidence in all control areas except San Diego County, where there was a very slight increase. In Colorado the heavily infected west end of Orchard Mesa in Mesa County showed a great improvement in control of the disease over 1957. The removal of an infected orchard, which was a center of spread in the Redlands area of Mesa County in 1957, resulted in better control of the disease this year in that area. However, in 1958 there was above-normal infection on the west side of Redlands near the Monument in one orchard. This is the first infection on west Redlands in a number of years. More than 50 mosaic trees were found on this property. There was very little change in the number of diseased trees found in Moab area of Grand County, Utah in the years 1957 and 1958.

Regulatory

Procedures or techniques used

There is no Federal peach mosaic quarantine. The movement of the regulated articles from the quarantine area is under standard state peach mosaic quarantines promulgated by the infected states. An exception is California, which has an embargo type quarantine prohibiting the movement of the peach mosaic regulated articles from within the regulated area to any point outside the area. Movement within the regulated area is permitted under certificate. Nurseries and budwood sources in the regulated area are inspected annually. Budwood trees and environs are inspected at the time buds are cut, and the budwood certificate is issued at that time.

Through agreement with the Plant Pest Control officials of Arizona and New Mexico, no host materials of peach mosaic have been permitted to move from those states in recent years. The Navajo Indian Agency no longer operates a stone fruit nursery near Shiprock in San Juan County, New Mexico. There are no commercial nurseries propagating the regulated articles in the affected area of Utah. In 1958, as in past years, all nurseries of which we have record in the peach mosaic regulated areas were contacted.

During the year, 173 nurseries and dealer premises and their environs located in the following regulated

counties and states were inspected: Los Angeles, Riverside, San Bernardino, and San Diego Counties, California; and Delta County, Colorado. These nurseries and dealers will grow and offer for sale 39,028 trees during the 1958-1959 season. All except three nurseries meet the requirements for certification under the standard state peach mosaic quarantine.

Accomplishments

In the peach mosaic regulated areas of California and Colorado, 456 budwood trees on 4 properties and their environs, involving 1,594 trees on 179 properties, were inspected. One budwood property in California did not meet certification requirements. As an added safety measure, three nurseries and their environs in areas not regulated by peach mosaic quarantines in the State of California were inspected, with negative results.

During the fiscal year 1958 in the Western Region, there was no change in the peach mosaic regulated area.

Methods Improvement

Not applicable

Other

Cooperation received during fiscal year

From July 1, 1957 to June 30, 1958, a total of 2,730 man-days of actual field inspection was furnished by County, State, and Plant Pest Control personnel--571 man-days by the counties, 868 by the states, and 1,291 by Plant Pest Control. This does not include supervisory personnel time, part of which was furnished by each agency.

Associated activities and services

Five inspector training sessions were conducted. Color slides were used along with a discussion of the control program and its objectives. This was followed by field trips to previously-selected infected orchards. The several types of mosaic symptoms, as well as other virus symptoms, were discussed and shown to inspectors.

RECOMMENDATIONS FOR COMING YEAR

Survey

Survey should be continued beyond the known infected areas.

Eradication

It is recommended that the cooperative control activities be continued in the control areas for the fiscal year 1959, as in the past.

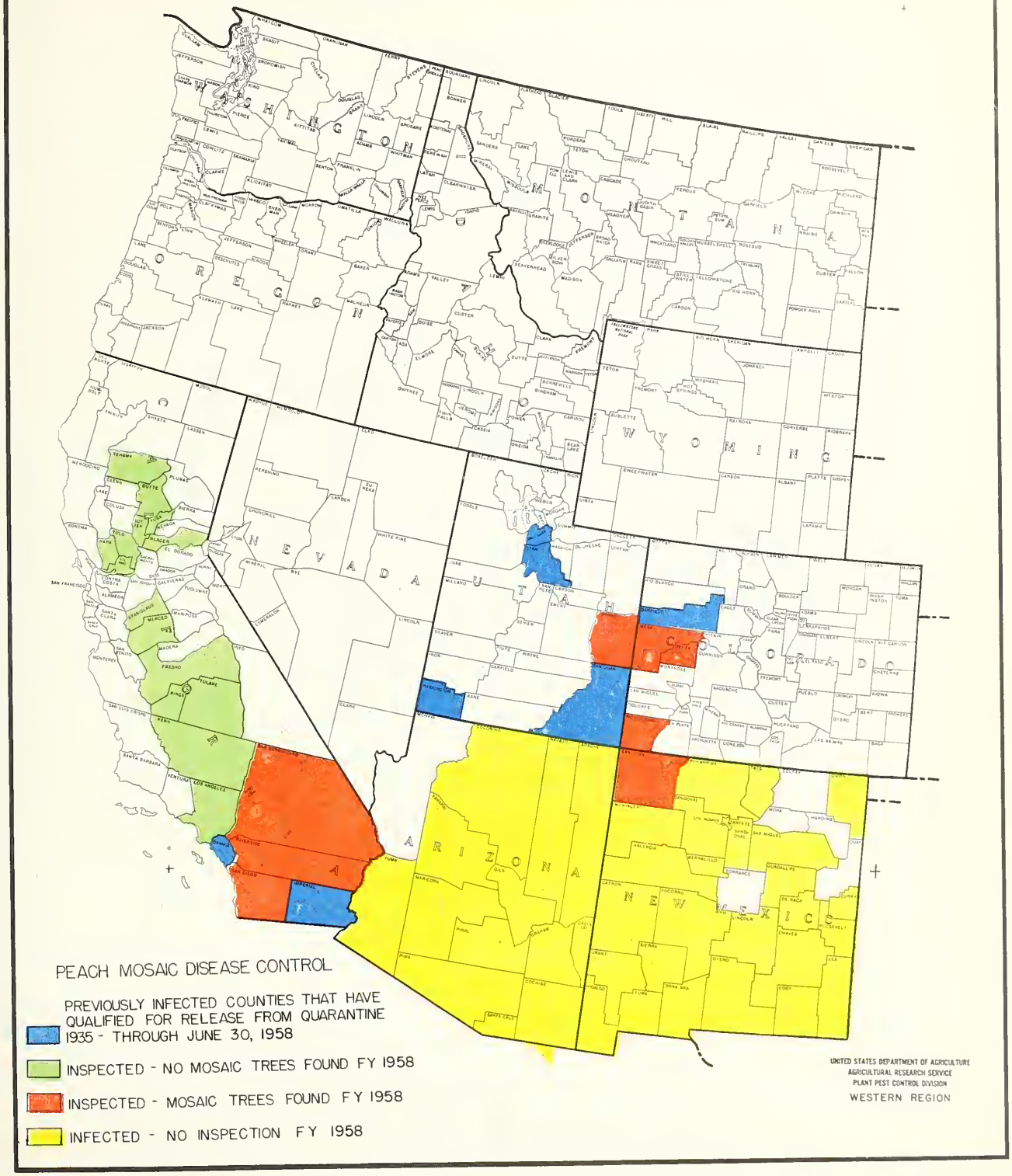
Regulatory

Regulatory activities appear adequate and should be continued.

Methods Improvement

Not applicable

PEACH MOSAIC DISEASE CONTROL



GPO 977337

INSPECTION RECORD
STATE SUMMARY

Peach Mosaic

Fiscal Year 1958

States	Counties			Properties		Trees		
	Number Inspected	No.Found Infected	No.Currently Infected	Number Inspected	Number Infected	Number Inspected	Number Infected	No. Infected Trees Removed
California	9	3	4	15,712	180	488,695	294	299
Colorado	2	3	3	1,965	568	1,266,907	2,593	2,593
New Mexico	1	1	27	2	1	16	6	6
Utah	1	1	1	156	8	15,487	16	16
Arizona	0	0	13	0	0	0	0	0
Totals	13	8	48	17,835	757	1,771,105	2,909	2,914
Cumulative Totals From Beginning of Program								
	130	54	48	584,523	31,629	41,089,350	396,307	292,397

BUDWOOD SOURCES AND ENVIRONS INSPECTIONS
REGULATED AREAS

Peach Mosaic

Fiscal Year 1958

STATE	Number of Counties	Total Number of Budwood Sources Inspected	Total Number of Budwood Trees	Number of Budwood Sources with Mosaic in Budwood Block	Number of Mosaic Trees in Budwood Block	Environs Inspection				Mosaic trees Removed by May 15, 1958
						Properties		Trees		
						Total Number Inspected	Number Infected	Total Number Inspected	Number Infected	
California	2	4	191	1	1	173	0	890	0	0
Colorado	1	1	265	0	0	6	0	704	0	0
Totals	3	5	456	1	1	179	0	1,594	0	0

NURSERY INSPECTION - REGULATED AREAS

Peach Mosaic

Fiscal Year 1958

State	Number Counties Inspected	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspection			
				Properties		Trees	
				Inspected	Infected	Inspected	Infected
California	4	172	38,278	349	3	2,342	4
Colorado	1	1	750	6	0	750	0
New Mexico	1	1	0	1	1	16	6
Totals	6	174	39,028	356	4	3,108	10

NURSERY INSPECTION - OUTSIDE REGULATED AREAS

State	Number Counties Inspected	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspection			
				Properties		Trees	
				Inspected	Infected	Inspected	Infected
California	1	3	67,435	75	0	419	0
Totals	1	3	67,435	75	0	419	0

SUMMARY OF ASSOCIATED ACTIVITIES

Peach Mosaic

Fiscal Year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest.Map & Posters	
Colorado	9	7	2	1			3			100		200
New Mexico	2	1	1	1			0			25		0
Utah	8	6	5	0			0			0		6
Total	19	14	8	2			3			125		206

* Written by Federal personnel for release direct or through cooperators.

EXPENDITURES BY SOURCE AND ACTIVITY

Peach Mosaic

Fiscal Year 1958

	1	2	3	4	5	6	7	8
Source of Cash & Equivalent*	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
Plant Pest Control Division	$10,150	$21,700	$9,613	$2,500	$ 2,689		$	$ 46,652
Other Organizations (Name)								
States	5,747	3,958	17,094	2,500	1,000			30,299
Counties	1,834		15,000	2,022	1,700			20,556
Subtotal - Other Organizations	7,581	3,958	32,094	4,522	2,700			50,855
Total (of PPC & Other)	17,731	[illegible],658	41,707	7,022	5,389			97,507
Contributed Services**								
States	500	1,800			20,087		500	22,887
Counties				1,056	26,272			27,328
Growers				1,082				1,082
Industry				1,000				1,000
Total	500	1,800		3,138	46,359		500	52,297
Grand Total	$18,231	$27,458	$41,707	$10,160	$51,748		$500	$149,804

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

COOPERATIVE AID RECEIVED

Peach Mosaic

Fiscal Year 1958

	1	2	3	4	5	6	7	8
State and Source of Aid	Cash and Equivalent Aid*				Total of Cash & Equivalent	Intangible Service Estimate**	Source Grand Total	Remarks
	Cash	Personal Services	Equipment & Supplies	Space				
States		$30,299			$30,299	$22,887	$53,186	
Counties		20,556			20,556	27,328	47,884	
Industry						1,000	1,000	
Growers						1,082	1,082	
Total This Period		$50,855			$50,855	$52,297	$103,152	

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

PHONY PEACH

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishments for the fiscal year

In Alabama, Georgia, South Carolina, and Texas, all peach nurseries were inspected and found free of phony disease. These nurseries were located in 13 counties of the 4 states.

Orchard inspections were made in 7 states, and all diseased trees found were destroyed either at the time of inspection or soon thereafter. No new counties were found infested with phony.

B. Major deviation from Work Plan

None.

C. Status of Program at close of year

Infection percentage varied very little from that of the previous fiscal year, except in the middle Georgia peach area where a further decline was noted. Phony disease in this area of Georgia, as well as in the Ridge section of South Carolina and the Clanton section of Alabama where serious losses once occurred, has been brought to a very low point; and in most orchards infection is now less than 1 percent.

II. Program Activity during fiscal year

A. Planning and Direction

1. How planned and directed

Control of phony disease in the affected areas is a cooperative program of the Plant Pest Control Division and the state plant pest control agencies. Nursery inspections, orchard inspections, surveys, and wild plum destruction, are planned in detail for each state by the Plant Pest Control Division Supervisor in Charge and responsible officials of the state plant pest control and regulatory agency. Direct supervision of the work is delegated to the district supervisors, and inspections are made by inspectors of the cooperating agencies.

B. Technical Assistance

1. Technical assistance provided to farmers and others by program personnel

Technical assistance to farmers or orchard owners is provided by program personnel. Information is furnished new growers and others on up-to-date control measures.

2. Technical assistance provided to program by cooperating agencies.

Technical assistance is provided to program personnel by pathologists, entomologists, and horticulturists at the laboratory located near Fort Valley, Georgia. This laboratory also supplies the peach growers with research data on the many aspects of the phony disease.

C. Survey

1. Procedures or techniques used

Surveys are usually made after the fruit is picked, which in the Southern Region is from the latter part of July until the middle of September. Phony affected trees are identified by a combination of factors including (1) short terminal growth which tends to give the tree a compact appearance with an even outline when viewed against the sky, (2) a deep, rather metallic green leaf color, and (3) shortened internodes and flat leaves. Since it is important that phony disease be detected as soon as possible following expression of symptoms, inspectors require training for at least one full season, and preferably two, before they can make adequate independent inspections in the commercial orchard areas.

Surveys are usually made each year in lightly infested sections to keep a close check on the course the disease may be taking. Survey procedures are exactly the same as for orchard inspection. Diagnosis is based on visual symptoms, although in cases of doubt a chemical test may be made of the roots or twigs.

2. Accomplishments

Inspections were made in 76 counties of 7 states affected, and 5,316,627 trees on 2,702 properties were inspected. Of this number, 28,872 trees on 661 properties were found infected with phony disease.

3. Statement or table of pest damage

Damage caused by the disease during the year, of course, is reflected in the loss of 29,872 trees. This is not only an immediate loss but also a loss which extends over a period of

at least three years, since that length of time is required to bring new trees into production.

D. Eradication or Control

1. Procedures or techniques used

Inspection of orchards is actually a part of control since diseased trees must be located and marked before applying the control procedure, which is removal of the infected trees. The actual procedure followed in making the orchard inspections, particularly in the heavily infected sections, is for inspectors to walk the orchards, or ride through them in jeeps.

Inspectors point out infected trees to the laborers and the trees are delimbed. Later, the orchard owner will remove the stumps with tractors.

It is important that all twigs, a year or more old, be removed, since the insect vectors are attracted to these twigs.

2. Accomplishments

The success of the phony peach disease program has depended to a large extent upon the cooperation of the peach growers in permitting complete inspection of their individual orchards, followed by early removal of the marked infected trees. Cooperation in the more important orchard areas of the Southern Region for the past several years has been almost 100 percent. The overall infection in the 7-state area remained about the same. In the most severely affected areas, however, there was considerable reduction in infection. In Georgia, for example, which has been the state most severely affected by phony disease, the overall infection in the state was .76 percent, the lowest on record. Infection last year in the state was .97 percent. In 1951, infection in the 4-county Fort Valley area was 7.9 percent and in the state as a whole it was 6.0 percent.

E. Regulatory

1. Procedures or techniques used

In the states where peach nurseries are located, all inspections are made as prescribed by the Standard States Phony Peach Disease Quarantine. This quarantine is the same in all the affected states, except for minor details.

2. Accomplishments

In 4 states of the Southern Region 32 nurseries, growing 1,353,896 trees of the regulated species, were inspected on previously approved planting sites and were found to conform with all quarantine requirements.

Both the planting site inspections and the subsequent check of the nursery stock indicate excellent cooperation of nurserymen in this program. No phony infected trees were found within the one-half mile environs of the planting sites, and the few wild plums that were found within 300 yards of the sites were removed immediately by the nurserymen.

No additional counties were found infested with phony disease during the fiscal year, and no counties qualified for release from regulation.

F. Methods Improvement

1. Work Performed

Studies and observations toward more efficient inspections were continued. Since the program began in 1929, it has been the practice to have inspectors walk the orchards, which is time consuming and therefore costly. Other studies sought to improve methods for killing wild plums in the orchard areas.

2. Accomplishments

Orchard inspections in several of the states were considerably stepped up by the use of jeeps. This made it possible for a much more rapid coverage of the orchards by experienced inspectors and with no loss in accuracy of diagnosis. The use of this type of equipment is particularly advantageous in the rough, rocky orchard areas such as are found in the mountainous or Piedmont sections, and in the southwest Arkansas commercial area. This equipment has considerably reduced the cost of making phony peach inspections.

Another improvement made during the past year was the use of herbicides, such as 2,4,5-T in oil, as a basal spray to kill wild plums. This was used during the winter months, instead of in late spring or early summer months as had previously been necessary with other herbicides. This method not only costs considerably less for material but also makes for better planning, since the work can be done during the winter, which in many instances is a slack season in control programs.

G. Other

1. Cooperation received during the fiscal year

All the states in the area affected by the phony disease join in the cooperative program and furnish about an equal number of inspectors, as well as about half of the other costs of the program. State agencies also enforce the quarantines regulating the production of nursery stock.

Peach growers cooperate by furnishing labor and materials for all the various operations connected with the work which includes marking infected trees, removing stumps of infected trees, and furnishing materials and labor in herbiciding the wild plum thickets near their orchards. For the past two or three years grower cooperation on this program has been practically 100 percent.

2. Associated activities and services

Newspapers, radio, television, fair exhibits, etc., were used to acquaint the peach growers with all the latest information on the phony peach disease program. In addition, very effective individual contacts were made with the peach growers to discuss the phony peach work and encourage their continued support. At this particular time, when the incidence of the disease is at the lowest point in the history of the program, this phase of the work should be greatly stepped up. Growers tend to lose interest when a disease, or an insect population, reaches a point where there is little visible damage.

III. Recommendations for the coming year

A. Survey

Surveys for phony disease should be extended in the main peach growing states insofar as possible, and particularly in areas where growers plan to set new orchards. If surveys show an abundance of wild plum or phony infected peach trees growing in the areas, much loss can be prevented if these trees can be removed at least a year in advance of setting the new orchards.

B. Eradication or control

There should be no relaxing of efforts in making as close an inspection as possible for the control and eventual eradication of phony disease.

C. Regulatory

None.

D. Methods Improvement

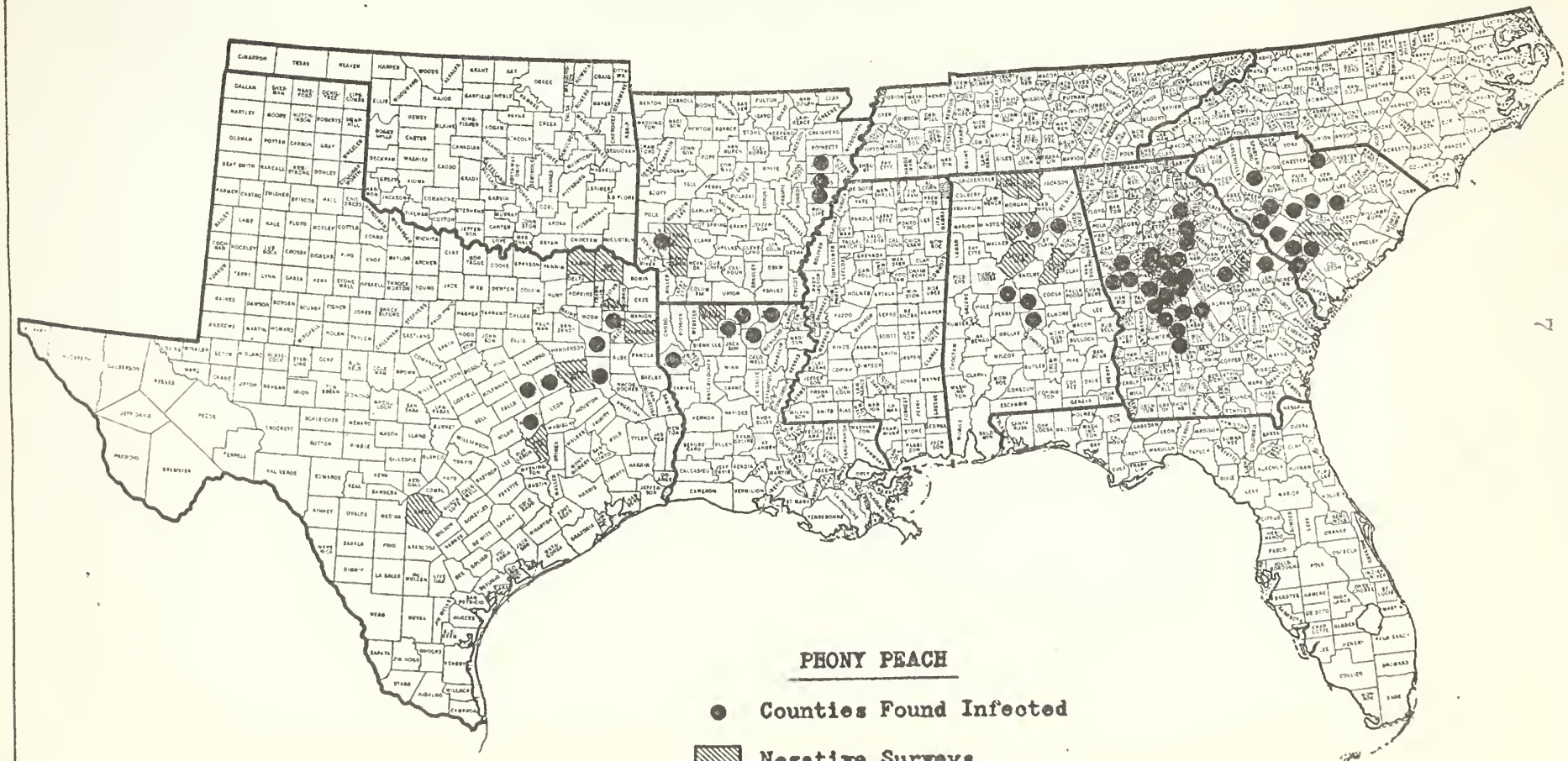
One difficulty in eradicating phony disease has been the inability to identify it in orchard trees of bearing age until they have been infected for possibly 18 months. The chemical test, of course, will reveal such infections before visible symptoms, but such a method is not practicable for regular orchard inspection procedure.

E. Associated Activities

It is recommended that every effort be made to attend meetings and conferences of peach growers to discuss the present situation in phony disease control and to encourage 100 percent cooperation in the program. This can be effectively done through meetings of growers, news releases from the state Extension Specialists, and discussions over radio and television programs.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



PHONY PEACH NURSERY INSPECTIONS
Fiscal Year 1958

State	Number Counties with Nurseries	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspections			
				Properties		Trees	
				Insp.	Infest.	Insp.	Infect.
Alabama	6	20	926,796	78	0	852	0
Georgia	3	3	180,000	13	0	66	0
South Carolina	1	1	30,000	3	0	8,000	0
Texas	3	8	217,100	44	0	527	0
Totals	13	32	1,353,896	138	0	9,445	0

PHONY PEACH

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1958

Date prepared:

STATE AND COUNTY	PROPERTIES				TREES			
	Inspected		Diseased		Inspected		Diseased	Removed
A	Initial B	Repeat C	D		Initial E	Repeat F	G	H
Alabama	586	0	310		594,509	0	3,766	3,766
Arkansas	84	0	18		276,660	0	52	52
Georgia	274	0	204		3,179,960	0	24,293	24,293
Louisiana	1,238	0	46		141,789	0	637	637
Mississippi	5	0	3		7,671	0	193	193
South Carolina	272	0	64		828,849	0	852	852
Texas	243	0	16		287,189	0	79	79
Total	2,702	0	661		5,316,627	0	29,872	29,872

PPC 7-18
FEB-58

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Phony Peach

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Georgia	7	3	2				2	1				
Louisiana	4	2	1									
Texas	1	1										
Total	12	6	3				2	1				

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
CENTRAL REGION

ANNUAL PROGRAM REPORT

PINK BOLLWORM

July 1, 1957 - June 30, 1958

In Cooperation with Other
Federal, State, County, and Local Agencies

November 14, 1958
Minneapolis, Minn.

R. O. Bulger
Regional Supervisor

TABLE OF CONTENTS

I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

A. Accomplishment for the fiscal year

To date the pink bollworm has not become established in the Central Region. The Missouri Department of Agriculture personnel in southeastern Missouri checked on the possible presence of this pest by maintaining traffic-inspection stations. The Extension Service conducted a cotton-insect scouting program between late June and early September. The Missouri Department of Agriculture and the Plant Pest Control Division cooperated in gin-trash inspection in five southeastern counties. Division personnel throughout all areas in the Central Region checked shipments of cotton products that originated in regulated areas to see that they were not diverted from the authorized destination.

B. Major deviation from work plan

None

C. Status of program at close of year

The first 3 phases of the program mentioned above in I-A pertain to Missouri. Kentucky and Illinois raise cotton but their combined acreage is less than that of Missouri. These two states carry on their own pink-bollworm inspection program.

II. PROGRAM ACTIVITY DURING FISCAL YEAR

A. Planning and direction

The planning and direction of the pink-bollworm program is the joint responsibility of the State Departments of Agriculture and the Plant Pest Control Division.

B. Technical assistance

Division personnel consulted and/or worked with State Department of Agriculture and Extension Service personnel in the setting up of the various phases of the program as conducted in each state.

Cooperating agencies supplied Division personnel with the results of their inspections and surveys.

C. Survey

The Missouri Extension Service in cooperation with individual farmers conducted a cotton-insect scouting program between late June and early September. Eight scouts inspected weekly approximately 15,000 acres of cotton. No pink bollworms were found.

Gin-trash inspection was carried on cooperatively by the Missouri Department of Agriculture and the Plant Pest Control Division in Dunklin, Mississippi, New Madrid, Pemiscot, and Stoddard Counties. A total of 204.5 bushels of trash obtained from gins operating in these counties was run through a separating machine and examined for pink bollworms. None were found.

D. Eradication or control

Not applicable.

E. Regulatory

There are no pink-bollworm areas in the Region under Federal or State regulations.

The Missouri Department of Agriculture maintained traffic-inspection stations from August to November on major highways in southeastern Missouri to prevent spread of live pink bollworms. Personnel checked 190,197 cars and trucks, and 351 cotton-picking crews for cotton being transported into the State. Cotton, estimated at 28,000 bolls, was intercepted on 2,128 occasions during the year. A total of 305 pick sacks were fumigated. Eight live pink bollworms were observed among the intercepted materials.

Division personnel in several areas in the Region inspected many shipments of cotton linters, cottonseed hulls, used cotton bagging, scrap bagging, motes, bleached lint, and factory sweepings. The purpose of the inspections was to see that the various products were being disposed of in such a manner that there would be no danger of pink bollworms surviving, if any were present, and to also be sure that the shipments were not diverted. All shipments inspected originated in regulated areas.

F. Methods improvement

None suggested.

G. Other

Cooperation received during the fiscal year included the inspection and survey services by the Missouri Department of Agriculture and the Extension Service. Their contribution of manpower and equipment was of material assistance to the inspection and survey programs.

Federal and State cooperators in Missouri appeared at 4 meetings, gave 4 talks, showed the pink-bollworm slides at 1 meeting, and distributed about 120 pieces of literature.

III. RECOMMENDATIONS FOR COMING YEAR

A. Survey

It is recommended that the Missouri Extension Service be encouraged to again conduct a cotton-insect scouting program, and that the gin-trash inspection program be continued and expanded.

B. Eradication or control

None, unless an established infestation is found.

C. Regulatory

It is recommended that the State Department of Agriculture continue their traffic-inspection stations.

D. Methods improvement

None.

E. Associated activities

None.

Pink Bollworm - Summary of Associated Activities - Fiscal Year 1958

State	Public Meetings Attended	Presentations: Talks	Presentations: Slides	Presentations: Films	Presentations: Radio	Presentations: TV	Feature & News Stories*	Extent These Aids Were Used**: Exhibits	Extent These Aids Were Used**: Bulletins*	Extent These Aids Were Used**: Circulars*	Extent These Aids Were Used**: Infest. Maps & Posters	Other
FEDERAL												
Missouri	1	1	1	-	-	-	-	-	15	-	-	-
COOPERATORS												
Missouri	3	3	-	-	-	-	-	1	100	-	-	-
Totals	4	4	1	-	-	-	-	1	115	-	-	-

*Written by Federal personnel for release direct or through cooperators.
**Conservative estimate.

Pink Bollworm - Expenditure by Source and by Activity - Fiscal Year 1958

State	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
CASH & EQUIVALENT *								
Plant Pest Control Division	$150	$ 75	$1,900	0	$ 200	0	$50	$ 2,375
Other Organizations:								
Missouri	$500	$200	$1,575	0	$21,600	0	0	$23,875
CONTRIBUTED SERVICES **								
Missouri	0	$400	0	0	$ 0	0	0	$ 400
GRAND TOTALS	$650	$675	$3,475	0	$21,800	0	[illegible]	$26,650

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

**Limited to services incidental to other activities for which only an estimated value is available.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
MEXICO REGION FOR COOPERATIVE PROGRAMS

ANNUAL PROGRAM REPORT

PINK BOLLWORM PROGRAM

July 1, 1957 - June 30, 1958

In cooperation with

MEXICAN DEFENSA AGRICOLA

November 10, 1958
Monterrey, N. L., Mexico

W. K. Clore,
Regional Supervisor

I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

A. Accomplishment for the Fiscal Year

All phases of the program are accomplished as a cooperative endeavor between the Plant Pest Control Division and Defensa Agricola.

In the Eastern Area, which comprises the states of Tamaulipas, Nuevo Leon, Coahuila, Durango and Chihuahua, infestations were suppressed and controlled to the extent that no economic damage was experienced. This was accomplished through controlled planting periods, surveys, cultural control practices and the application of insecticides in fields sufficiently infested to merit its use. Surveys indicated that control methods used resulted in a light winter carry-over to the 1958-59 crop.

The Western Area is comprised of the states of Sinaloa, Sonora and Baja California. The State of Sinaloa was designated as a district and a district supervisor assigned with headquarters at Mazatlan. Personnel at the Mazatlan road station was increased and more closely supervised. Efficiency of inspection at the station improved to the point of maximum control of truck and bracero traffic from the regulated Eastern Area into the protective zone of Western Mexico.

Surveys in the Western Area revealed that the area was apparently free of pink bollworm except in the Culiacan, Sinaloa zone where bloom inspection resulted in the finding of 13 pink bollworms in a five acre dry-land planting, relatively isolated, about 20 miles northeast of Culiacan. Surveys were intensified in the zone, with no further findings. D.D.T. insecticide was applied to the infested field and after the harvest the seed cotton was fumigated and the stalks destroyed.

A road station was established at Terreros, Sinaloa on the main highway leading north from Culiacan for the purpose of intercepting pink bollworm host materials moving out of the infested zone. Other inspection points at railroad stations, airports and seaports were continued in operation. Interceptions demonstrated their value in protecting Western Mexico and adjacent United States.

B. Major Deviation from Work Plan

In southwestern Coahuila, Durango and Chihuahua, drought and economic conditions resulted in abandoned acreage, thus preventing the accomplishment of total stalk destruction. An increased infestation around the abandoned fields is expected which will probably necessitate increased insecticide applications. The deadline dates were extended in the states of Chihuahua, Durango and Coahuila.

Deviation in the plan in the Western Area could more properly be considered as implementation to handle the problem arising from the pink bollworm finding at Culiacan, Sinaloa. This included the placing of the Culiacan zone under quarantine, increased inspections in Sinaloa and the establishment of the Terreros road station with a consequent increase in personnel.

I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY - concluded

C. Status of the Program at End of Year

The program was progressing according to plan at the end of the year.

Debris and bloom inspection in the Eastern Area showed a reduction in infestation over the previous year, except in the vicinity of abandoned fields in the states of Coahuila and Durango where bloom inspection indicated an increase in infestation. Debris and bloom inspection in the State of Chihuahua indicated the infestation to be lighter than during the last two years.

In the Culiacan, Sinaloa zone, gin trash inspection was in progress and bloom inspection in the State of Sonora. Stalk destruction at Culiacan had been initiated, with August 15 as the deadline. Up to the close of the year, no additional infestation had been found.

II. PROGRAM ACTIVITIES DURING FISCAL YEAR

A. Planning and Direction

1. How Planned and Directed

The PPCD supervisory personnel at regional and area levels and the Director General of Defensa Agricola and local representatives, by means of frequent discussions cooperatively plan and direct the various phases of the program through personnel at the different levels. From observations as well as direct contacts and from reports, from discussions with Patronatos and the Extension Department, program needs are maintained and/or established.

B. Technical Assistance

1. Technical Assistance Provided to Farmers and Others by Program Personnel

All new developments in research and recommended procedures to aid pink bollworm control are passed on through program personnel to pink bollworm committees, growers and processors of cotton.

The control personnel is frequently called upon for information to be delivered in talks and to be used in papers for publication in trade journals on the current pink bollworm situation.

Technical assistance is also furnished in the fumigation procedures for the relatively limited movement of gin machinery and sacks used for hauling seed cotton in trucks.

II. PROGRAM ACTIVITIES DURING FISCAL YEAR - continued

B. 2. Technical Assistance Provided by Cooperating Agencies

Research developments concerning fumigation procedures, pink bollworm control, and inspection procedures from USDA research agencies are followed carefully in the cooperative program.

C. Survey

1. Procedures or Techniques Used

a. Field

In the Eastern Area field debris inspection is made on a yardage basis, taken at five points in the field so that the number of live pink bollworm per acre may be calculated.

In the present method of bloom inspection, the number of pink bollworm larvae are calculated per 100,000 blooms inspected. This method is being changed so as to determine the number of larvae per acre. Bloom inspections were made in the Culiacan zone and in northern Sinaloa more intensively than originally planned as the pink bollworm finding made it necessary to delimit the infestation. Limited bloom inspections were made in southern Sonora in early blooming fields.

Lint cleaner inspection in the gins is now figured at one larva on the lint cleaner being equivalent to 12 larvae from gin trash inspection. In the Western Area where gin trash machines are used in season, effort is made to secure a good volume of first-cleaner gin trash for a sufficient period of time to secure a thoroughly representative sampling of each cotton area in the three states of Sinaloa, Sonora and Baja California. These inspections, as well as other surveys in the area, are for detection only. Since there is a limited number of lint cleaners, informal inspections are made, checking the glass plates during the course of picking up gin trash at the gins.

Green boll inspection in the western portion of the Eastern Area is made to determine whether the infestation is heavy enough to continue insecticidal control. Some boll cutting was done in the Culiacan zone in the delimiting work following the pink bollworm finding.

b. Laboratory (Not applicable)

2. Accomplishments

Debris inspection was started in central Tamaulipas and southern Nuevo Leon in January and continued north and northwest through Coahuila, Durango and Chihuahua, showing a lighter infestation than was the case during the previous two years. (See table 1) In southern Tamaulipas where winter cotton is grown, green boll inspection was made in February. Green boll inspection was also made in the Huasteca region of San Luis Potosi and southern Tamaulipas, with negative results.

II. PROGRAM ACTIVITIES DURING FISCAL YEAR - continued

C. 2.- concluded

Due to rains during February, considerable acreage in the Matamoros district had to be replanted. Because of this, most of the acreage in this district was planted the last of March resulting in a uniform planting period. As a result of this late planting, bloom inspection was not begun in central and northern Tamaulipas and Nuevo Leon until May. This inspection progressed northwest through the eastern area, ending in northern Chihuahua after the close of the fiscal year. (See table 2) Only a few fields showed heavy infestations and these were adjacent to abandoned 1957 cotton fields in southern Coahuila, Durango and Chihuahua. Arrangements have been made for control of the pink bollworm in these fields with application of insecticides.

On the West Coast bloom inspection revealed an infestation at Culiacan, Sinaloa of 13 pink bollworms. Intense inspection in the infested field and in other fields in the Culiacan zone failed to reveal further infestations. Bloom inspection in northern Sinaloa and southern Sonora was negative. A large volume of gin trash was inspected in season in the Western Area with negative results. Lint cleaner inspections in conjunction with gin trash inspection were also negative although one specimen was recovered for identification. (See tables 2, 3 and 4)

3. Statement or Table of Pest Damage

There was no economic damage of any consequence.

D. Eradication or Control

1. Procedures or Techniques Used

Upon finding the infestation in the field in the Culiacan, Sinaloa zone, plans were immediately initiated for a program of delimiting and eradicating the infestation. The recommendation to discourage moth migration by giving the infested field applications of 20 per cent D.D.T. at weekly intervals until harvest was followed by Defensa Agricola to the extent of making one application of D.D.T. at the rate of 20 pounds per acre, and the cotton was harvested. The cotton was then methyl bromide fumigated under tarpaulins in the prescribed manner and ginned; the cotton stalks were cut, surface debris and stalks gathered in piles and burned and the field plowed. Delimiting surveys revealed no further infestation in the vicinity or in northern Sinaloa. In view of the relative isolation of the field, treatment was confined to the infested field.

Through discussions with local delegados of Defensa Agricola, it was agreed that a host-free period in the Culiacan zone was necessary and farmers were advised that, instead of both a summer and winter crop, there would be no further summer planting.

II. PROGRAM ACTIVITIES DURING FISCAL YEAR - continued

D. 1.- concluded

Control procedures in the regulated zone were maintained and continued in the same manner as the previous year, with planting and stalk destruction dates part of the requisites to permit a maximum host-free period in each of the zones in the five states. (See table 5)

2. Accomplishments

In the states of Tamaulipas, Nuevo Leon and northern Coahuila, complete stalk destruction was effected with a few growers not completing the work by the deadline date. In Chihuahua, Durango and southern Coahuila, due to drought conditions, a few farmers abandoned their cotton acreages and moved to other parts of Mexico. Slightly higher than normal infestations of pink bollworm built up in some 1958 fields adjacent to the abandoned fields. Farmers resorted to insecticidal control to prevent economic loss.

Inasmuch as intensive gin trash, bloom and green boll inspections have not revealed any further infestation in West Mexico, it is hoped the pink bollworm infestation was confined to the one field where found. Results of surveys to the end of the year would appear to indicate that the measures taken obtained the desired result of eradicating the pink bollworm. At the end of the fiscal year, clean-up of cotton fields in the Culiacan zone had been initiated with indications that farmer attitude toward final compliance was generally good.

E. Regulatory

1. Procedures or Techniques Used

The recent revision of the Mexican pink bollworm quarantine made the regulations more rigid than ever before. Sterilization of cottonseed during the process of ginning at a minimum temperature of 150° F, not to exceed 165° F, is strictly enforced in the regulated area and in the buffer zone to the south. Sanitary conditions of processing plants and their premises are maintained as well as segregation of products to eliminate the danger of contamination. The movement of products are regulated, with a permit system by Defensa Agricola to protect noninfested as well as infested zones. When pink bollworm was found in Culiacan, the same regulatory measures were set up as in the Eastern Area. However, soon after the ginning season started, a permit was secured permitting sterilizers to be dispensed with providing all seed be sent south to Guadalajara, Jalisco for milling. Fumigation with methyl bromide was required of sacks used in the transportation of seed cotton from Guasave, Sinaloa to Culiacan for ginning before being allowed to return to Guasave.

Effort is directed toward protecting the northwest coast of Mexico and western United States against man-transported pink bollworm from heavily infested eastern Mexico by means of strategically located inspection stations. These inspections cover railroad passengers and cargo and seaport,

II. PROGRAM ACTIVITIES DURING FISCAL YEAR - continued

E. 1.- concluded

highway and airport terminals. Contaminated railroad cars are cleaned and/or fumigated with methyl bromide. At the Ensenada seaport all imported bagging delivered there is methyl bromide fumigated. Of the various inspection points, Terreros and Mazatlan, Sinaloa are exclusively pink bollworm quarantine stations; the other stations inspect passenger and cargo traffic for pink bollworm host material as well as for Mexican fruit fly, citrus blackfly and kahpra beetle host materials.

2. Accomplishments

At inspection points on the West Coast of Mexico, a large volume of pink bollworm host material originating in infested areas was intercepted and destroyed. Procedures served to afford maximum protection to northern Sinaloa, Sonora, Baja California and western United States. (See table 6) No pink bollworm were intercepted in bracero baggage at the Calexico port.

In the Eastern Area known to be infested, 10,957 gin inspections were made in the seven combat zones, representing 273 gins of which 250 operated. These gins processed 1,047,795 bales of cotton during the year. A total of 1,050 visits were made to 21 oil mills, 11 of which were certified for movement of products to the United States. The mills handled 222,998 metric tons of seed. Also, 664 official visits were made to six compresses which handled 212,624 bales of cotton. There were 127 gins, 11 oil mills and three compresses certified for movement of products to and through the United States. Efforts continue for all the regulated zone to be under the same regulations and privileges as the contiguous area. (See table 4)

A total of 1,192 permits were issued for the movement of cotton and linter samples through the Brownsville Port of Entry.

F. Methods Improvement (Not applicable)

G. Other

1. Cooperation Received during Fiscal Year

a. Cooperation is furnished by Patronatos, committees, cotton associations, experiment stations and extension service through propaganda and education in executing the cultural control program of regulated areas and through the inspection stations in the protective zones.

b. Cooperative Work Needing Strengthening Another Year (Not applicable)

2. Associated Activities and Services

a. Program Servicing

II. PROGRAM ACTIVITIES DURING FISCAL YEAR - concluded

G. 2. a. (1) Evaluation. The participation of representatives of the state departments of agriculture of the states of California, Arizona, Texas, New Mexico and Louisiana in the Mexican-American Work Conference held in Mexicali, B. C., October 23-26, 1957, was helpful in coordinating the program objectives on both sides of the International Border. PPC personnel from the Western Area of Mexico also attended a work conference of the Western Region at Oakland, California January 20-24, 1958 which was of inestimable value in assuring uniformity of operation, improvement of techniques and understanding.

b. Survey

A survey of damaged fruit from the Matamoros city market was conducted semi-weekly for a period of eight months and 250 fruit fly traps were operated for six months in Matamoros, Nuevo Laredo, Montemorelos and Linares for Mediterranean fruit fly. These inspections were negative.

III. RECOMENDATIONS FOR COMING YEAR

A. Survey

An increase in the amount of debris and bloom inspection in the Eastern Area is recommended for the coming year. In the Western Area it is recommended that the survey be continued as in the past, with gin trash inspections in volume in the three states and intensive field survey in Sinaloa, particularly in the Culiacan zone.

B. Eradication and Control

Efforts toward eradication should continue in the Culiacan zone and greater emphasis should be placed on stalk destruction, optimum planting dates and proper maintenance of host-free period in both areas.

C. Regulatory

No changes recommended in the chain of inspections as presently set up to protect northwest Mexico and the adjacent cotton-growing areas in the United States; quarantines should continue in force in the Culiacan zone of the Western Area. No changes are recommended in the Eastern Area unless the Mexican quarantine is amended.

D. Methods Improvement

An improvement of survey means for detection of pink bollworm would be of considerable value in the Western Area and at the close of the fiscal year thought was being given to the use of black light traps.

E. Associated Activities No changes

****

Table 1

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Region - Mexico

PINK BOLLWORM

F. Y. 1958

DEBRIS INSPECTION

State and No. Municipios	Stalk Destruction Deadline	Within Regulated Area Number of Acres Inspected	No. Sq. Yards Inspected	No. Bolls Inspected	Number Pink Bollworms Found	
					Alive	Dead
TAMAULIPAS						
10 Municipios	8/31	26,922	6,400	3,914	22	36
1 Municipio	9/25	1,987	475	397	1	-
NUEVO LEON						
20 Municipios	9/25	3,953	1,675	493	11	21
COAHUILA						
10 Municipios	10/10	3,285	575	373	44	66
4 Municipios	12/15	609	201	931	30	18
DURANGO						
4 Municipios	12/15	542	193	493	13	22
CHIHUAHUA						
15 Municipios	12/31	1,220	3,950 est.	1,869	2	315
TOTALS:		38,518	13,469	8,470	123	478

PINK BOLLWORM

TABLE 2

* Regional office in preparing report for Division should group all counties within a State having identical stalk destruction deadlines into one reporting entry and identify the entry by stalk destruction deadline date.

REGION: MEXICO

PREPARED BY:

PERIOD (Designate month, 1-15, 16-31, or 1-31): JULY 1, 1957 to JUNE 30, 1958

DATE PREPARED:

STATE, ZONE, COUNTY, OR LOCALITY * (A)		BLOOM AND GREEN BOLL INSPECTION: WITHIN REGULATED AREA, NUMBER OF ACRES: INSPECTED (B)	WITHIN REGULATED AREA, NUMBER OF ACRES: INFESTED (C)	OUTSIDE REGULATED AREA, NUMBER OF ACRES: INSPECTED (D)	OUTSIDE REGULATED AREA, NUMBER OF ACRES: INFESTED (E)	TOTAL COUNTIES INFESTED (F)	DEGREE OF INFESTATION, NUMBER OF COUNTIES INFESTED: TRACE (G)	LIGHTLY (H)	HEAVILY (I)
TAMAULIPAS	8/31	63,018	13,462			8	8		
"	9/25	16,244	12,164			2	2		
NUEVO LEON	9/25	15,856	3,042			9	9		
COAHUILA	10/10	7,296	3,565			11	7	3	1
"	12/31	4,120	4,120			4			4
DURANGO	12/31	4,395	4,395			4			4
CHIHUAHUA	12/31	2,787	2,327			16		6	10
SAN LUIS POTOSI				700					
SINALOA		9,604	6	5,655		1	1		
SONORA				1,117					
TOTAL THIS PERIOD									
F. Y. 1958 TOTAL FROM JULY 1		123,320	43,081	7,472		55	27	9	19

*Actual acreage inspected and found infested. 127 Municipios under quarantine and infested are covered by acreage planted as shown in Table 5, page 2 of 2 pages, PPC Form 7-20.

PPC Form 7-20
May 1958

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Table 3

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Region - Mexico

PINK BOLLWORM

F. Y. 1958

GIN TRASH INSPECTION

State	No. Municipios	Bushels Trash Inspected	Bales Represented	P B W Larvae Found	P B W per Bushel	P B W per Bale
TAMAULIPAS	3	497	3,392	314,091	2,185	296
SINALOA	9	2,360	-	-	-	-
SONORA	6	3,994	-	-	-	-
BAJA CALIFORNIA	1	7,486	-	-	-	-
TOTALS :	19	14,337	3,392	314,091	2,185	296

Table 4

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Region - Mexico

PINK BOLLWORM

F. Y. 1958

LINT CLEANER INSPECTION

State	No. of Locations	No. of Inspections	Pink Bollworms Found	Bales Represented
COAHUILA	11	27	209	27
DURANGO	6	14	231	75
CHIHUAHUA	17	66	2,414	129
SINALOA	3	18	0	0
SONORA	0	100	0	0
TOTALS:	37	225	2,854	231

PINK BOLLWORM

TABLE 5

* Regional office in preparing report for Division should group all counties within a State having identical stalk destruction deadlines into one reporting entry and identify the entry by stalk destruction deadline date.

REGION: MEXICO

PREPARED BY:

PERIOD (Designate 1-15, 16-31, or 1-31): JULY 1, 1957 to JUNE 30, 1958

DATE PREPARED:

STATE, ZONE, COUNTY, OR LOCALITY * (A)	CULTURAL CONTROL					REGULATORY CONTROL		
	STALK DESTRUCTION DEADLINE (B)	ACREAGE PLANTED (EST.) (C)	ACRES STALKS DESTROYED THIS PERIOD (D)	ACRES STALKS DESTROYED THIS SEASON (E)	FARM CALLS (F)	NO. REGULATED ESTABLISHMENTS VISITED (G)	NUMBER VIOLATIONS FOUND (H)	TONS OF REGULATED PRODUCTS MOVED (I)
TAMAULIPAS	Aug. 31	750,000		750,000	27,200	117	300	262,754.5
"	Sept. 25	25,000		25,000	1,200	6	25	12,258
NUEVO LEON	Sept. 25	9,000		9,000	850	10	21	4,877
COAHUILA	Oct. 10	9,250		9,250	225	2	7	2,442
"	Dec. 15	145,000		142,600	740	53	36	91,000
DURANGO	Dec. 15	102,500		98,000	710	30	30	66,000
CHIHUAHUA	Dec. 31	217,460		211,200	1,380	49	51	150,000
SINALOA (Culiacan zone)	Aug. 15	18,000 1st. yr.			3			
F. Y. 1958 TOTAL THIS PERIOD		1.276,210		1.245,050	32,305	270	470	589,331.5
TOTAL FROM JULY 1								

PPC Form 7-20
May 1958

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Table 6

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

Region - Mexico

Cooperative Inspection Stations

F. Y. 1958

Inspection Stations	Type of Inspection	Number of Inspections	Number of Passengers & Braceros	Pieces of Baggage & Express	RR cars & trucks cleaned &/or fumigated	Host Interceptions: Occasions MFF	Occasions CBF	Occasions PBW	Items MFF	Items CBF	Items PBW	Items KB
BAJA CALIFORNIA												
Tijuana	Plane	2,848	66,845	236,527	-	1,430	138	-				
Mexicali	Planes	1,221	14,286	51,730								
	Trucks	382		-		273	35	34				
	Railroad	-		14,400	150							
Ensenada	Plane	399	535	1,405		49	10	-				
	Boat	81	533	838		20	14	3/2				
SONORA												
San Luis	Rd.Station	12,124	-	-	-	967	50	217				
Benjamin Hill	RR cars	6,768	-	-	1,365							
	RR pssgr.	-	1/253,954	-		-	-	-	23,227	1,692	4,813	5K.
	Rd.Station	128,873	-	-	316	15,397	874	529				
Nogales	Plane	777	9,353	23,334	-	343	76	31				
	RR Mkt.Mail	Daily	-	-	-	319	66	-				
SINALOA												
Mazatlan	Rd.Station	39,817	81,012	-	1,882						2,510 and 1,075 k. cottonseed	
	Plane	413										
	RR cars	1,126	26,551	0	0							
	RR trains	522										
	Boat	344										
Terreros 2/	Rd.Station	10,723	-	-	327	-	-	-			367	
TOTALS		206,418	453,069	328,234	4,040	18,798	1,263	813	23,227	1,692	8,765	5k.

1/ 131,658 Braceros. 2/ Station operated since 2/21/58. 3/ 1,769 bales of bagging.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
PROGRAM COST DISTRIBUTION

TABLE 7

PINK BOLLWORM PROGRAM	MEXICO REGION FOR COOPERATIVE PROGRAMS					Reg. Superv.	Date 10 NOV 1958	F.Y. 1958
Source of Cash and Equivalent (A)	Planning & Direction (B)	Technical Assistance (C)	Survey (D)	Control (E)	Regulatory (F)		Other (H)	TOTAL (I)
1. PLANT PEST CONTROL ARC								
Headquarters	10,180	3,000						13,180
Eastern Area	11,500	3,000	17,200	28,970	28,800			89,470
Western Area	8,000	3,000	10,000	9,350	27,000			57,350
2. SUB-TOTAL	29,680	9,000	27,200	38,320	55,800			160,000
3. OTHER								
Western Area								
Defensa Agricola							12,816	12,816
Patronatos BC, Sonora & Sinaloa							25,795	25,795
Industry							1/ 14,400	14,400
4. SUB-TOTAL							53,011	53,011
5. T O T A L	29,680	9,000	27,200	38,320	55,800		53,011	213,011
6. CONTRIBUTED SERVICES								
Eastern Area								
Mexican Federal Gov't.							73,837	73,837
Patronato & Local Comm.							60,344	60,344
Industry							2/785,846	785,846
Western Area								
Mexican Federal Gov't.							3,120	3,120
7. T O T A L							923,147	923,147
8. G R A N D T O T A L	29,680	9,000	27,200	38,320	55,800		976,158	1,136,158

1/ Railroad car fumigation at Benjamin Hill, Sonora

2/ Charges for sterilization & sanitation estimates 75¢ per bale.

-continued

TABLE 7 - Concluded

LEGEND

1. PLANT PEST CONTROL DIVISION units. Areas named.

2. Sub-total for all PPC funds included in (1).

3. OTHER ORGANIZATIONS; measurable cash expenditure.

4. Sub-total for all OTHER ORGANIZATIONS, included in (3).

5. Totals of PPC and OTHER ORGANIZATIONS, (2) plus (4).

6. CONTRIBUTED SERVICES.

7. Total of CONTRIBUTED SERVICES (6) only.

8. GRAND TOTAL (5) and (7).

* --- *

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

PINK BOLLWORM

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishments for the fiscal year

Surveys for this pest were made in approximately 500 counties in all states of the Southern Region except the Carolinas. No pink bollworms were found in Alabama, Georgia, Mississippi, or Tennessee, and none were found in the cotton growing section of Florida. Very light infestations were found in Arkansas and Louisiana, but in wide areas of Oklahoma and Texas infestations varied from extremely light to rather severe. In the generally infested states of Oklahoma and Texas, the surveys were made primarily to determine the status of infestation.

B. Major deviations from Work Plan

It became necessary, due to prolonged heavy rains and wet fields, to extend deadline dates for cotton stalk destruction in Louisiana and Texas.

There was a revision of the Federal Pink Bollworm Quarantine which became effective August 31, 1957. This revision included the waiver of the certification requirement on movement of cottonseed meal, cottonseed cake, and compressed cotton moved by common carrier to any destination. In addition, the regulated area was divided into generally infested and eradication areas. Administrative instructions may be issued for modification without a revision of the quarantine; and during the current year, two such administrative instructions were issued. There was also a revision of the Treatment Manual.

Examination of gin trash is perhaps one of the most used survey methods for making rapid surveys of cotton grown over wide areas. Difficulties have arisen in this type of inspection, however, because of inability to collect suitable gin trash at the newer gins. These modern gins pipe the trash into a common line that terminates in an incinerator; and in order to obtain suitable trash from the line, it is necessary to install a trap, or "Y" which costs from $150 to $350.

C. Status of Program at close of year

No pink bollworm infestations are known to exist east of the Mississippi River except the small infestations in wild cotton in the southern tip of Florida. In Louisiana, only one of the parishes under regulation was known to be actually infested; however, three adjoining parishes were found infested for the first time. In Arkansas, inspections were made in 53 counties and only 2 pink bollworms were found, both of which were found in gin trash at gins located in Hempstead County. In Oklahoma,

at the end of the year, the pink bollworm infestation was still fairly general, although much lighter than that found the previous year. In Texas, heavy rains seriouly hampered cleanup work in five northern cultural zones. Many extensions of the deadlines for harvest were necessary, which no doubt greatly increased the number of pink bollworms going into hibernation.

II. Program Activity during fiscal year

A. Planning and Direction

All activities of the pink bollworm program were carried on in full cooperation with the state plant pest control agencies. The supervisor in charge and the state agency officials discussed and developed the plans, which subsequently were mutually agreed upon by the state pest control agency, the local area official or supervisor in charge, and Region and Division supervisory personnel. In actual operation, the supervisor in charge delegated work assignments to the district supervisors who had full responsibility for directing the planned activities in the several districts. Inspectors furnished by the Division and state pest control agencies worked as a unit under the direct supervision of district supervisors.

B. Technical Assistance

1. Technical assistance provided to farmers and others by program personnel

District inspectors, both federal and state, keep in close contact with the cotton growers of their respective districts in order to provide them with the latest information on control measures. These measures include proper methods of stalk destruction in order to comply with state quarantine requirements. Technical assistance is provided processors relative to treatments required for restricted products, the operation of equipment used in treatment processes, and approved sanitary procedures for storing and handling products prior to movement from the regulated areas. Similar assistance is furnished transportation companies on their acceptance and movement of restricted articles.

2. Technical assistance provided to program by cooperating agencies

State pest control agencies assign their regular inspectors to assist in making surveys. Assistance is provided also by Extension Service, Soil Conservation Service, and the Farm Bureau to growers, ginners, compress operators, oil millers, bankers, and other organizations interested in the cotton industry.

C. Survey

1. Procedures or techniques used

(a) Field

In states east of the Mississippi River, the procedures or techniques usually used in surveying for the pink bollworm consist almost entirely of the operation of gin trash machines. In states west of the Mississippi River where infestations have been found, several methods of inspection or survey are employed in covering the cotton growing areas. These include bloom inspection, which is carried on in the spring, and green boll inspection, which begins about six weeks after bloom inspection has been completed and which is continued intermittently as time permits throughout the growing season. These methods are used in generally infested areas to determine population trends. Gin trash inspection is employed in the infested states throughout the ginning season, followed by field debris inspections which are completed about six weeks prior to planting the succeeding crop. The primary purpose of field debris inspections is to determine the over-winter survival of pink bollworm.

(b) Laboratory

The only laboratory methods employed in surveying for the pink bollworm consist of examinations by taxonomists of suspected pink bollworm larvae.

2. Accomplishments

No infestations were found in Alabama, Georgia, Mississippi, or Tennessee, or in the cotton growing counties of north Florida. Very light infestations were found in Arkansas and Louisiana; while in Oklahoma and Texas, infestation was found to be rather general over the cotton area and ranged from a trace in some localities to rather heavy in others. In Louisiana, an infestation was found in one of the regulated parishes; and although this was a rather general infestation, it was extremely light. No heavily infested fields could be located. Three adjoining parishes also were found to be very lightly infested. Pink Bollworms were found in 26 counties in Oklahoma, with infestation populations ranging from a trace to moderately heavy. In Texas, infestation continues to be general over the greater part of the cotton growing section of the state, and damage was found to be very light in most instances.

3. Statement of pest damage

The pink bollworm larva feeds inside the green cotton boll, and in this feeding it moves from seed to seed cutting and staining the immature fibers and completely destroying the contents of the seed. This results in considerable loss of lint from staining and cutting, which reduces the lint to an exceptionally low grade, and in loss of weight of the seed, which reduces the amount and value of the oil. Fungi often completely ruin bolls in which pink bollworms have left exit holes. The pink bollworm is quite capable of inflicting serious damage to cotton and will cause complete loss in areas where control measures are not practiced. This insect also attacks okra and a number of other malvaceous plants as secondary hosts.

D. Eradication or Control

1. Procedures or techniques used

In states where infestations are extremely light and scattered, as in Arkansas and Louisiana, every effort is made to eradicate infestations as soon as possible after they are found. Eradication measures include early destruction of crop debris, seed treatments, and insecticidal applications wherever they are deemed necessary or advisable. In generally infested areas, such as Oklahoma and Texas, the program is largely one of control. Methods used include planting at the optimum time and growing the crop in the shortest possible period. Buildup of infestations is held to a minimum by the resulting reduction in the number of generations of the pest where cotton is grown under these conditions. This also materially reduces the danger of spread by moth flight and the number of larvae entering hibernation. Gin trash from gins located in or near infested areas is burned or given the fan treatment. Cottonseed is treated by prescribed methods in order to destroy any larvae that may be present. Field control methods employed were the three generally recommended practices; namely, early harvest, early stalk destruction by shredding or heavy grazing, and plowing of the land.

E. Regulatory

1. Procedures or techniques used

Federal Quarantine No. 52 designates the regulated area, the regulated articles, the conditions governing the movement of the regulated articles, conditions governing the issuance of certificates and limited permits, and assembly of articles for inspection. It provides for cancellation of certificates or limited permits, required certain inspections and disposition of contaminated material, and specifies how shipments for scientific purposes may be made of live pink bollworms or other material likely to be infested. This quarantine is

amended or changed as conditions require. In addition, a manual of administratively authorized treatments for certification of restricted products and articles is available for use as a guide in preparing materials or products likely to be infested with pink bollworm for shipment to areas not known to be infested. Federal inspectors issued 27,137 permits for movement of cotton and cotton products and fumigated 111 mechanical cotton pickers during the 1957-58 season. Road patrol stations were operated in Arkansas, Louisiana, and Mississippi; and the results are itemized in the tabulated summary.

2. Accomplishments

So far as is known, there has never been an infestation of the pink bollworm established through the movement of quarantined products under a certificate or limited permit.

F. Methods Improvement

1. Work Performed

During the past several years, lint cleaners have been installed in many gins; and with the continued improvement in the movement of lint, cottonseed, and gin trash by air, it has become increasingly difficult to secure gin trash for inspection. Consequently, the inspection of the lint cleaners to determine pink bollworm infestation has gradually replaced gin trash inspection in some localities. Constant inspection of lint cleaners during the ginning season enables the inspector to get a fairly accurate reading of pink bollworm infestation.

2. Accomplishments

Gin trash and lint cleaner inspections were made in 9 of the 11 states of the Southern Region, and a summary shows that inspections were made of 48,836 bushels of gin trash in 347 counties, and lint cleaner inspections were made in 295 counties. Gin trash inspections resulted in finding infestations in Arkansas, Louisiana, Oklahoma, and Texas; and lint cleaner inspections resulted in positive finds in Oklahoma and Texas.

G. Other

1. Cooperation received during the year

(a) The Plant Pest Control Division and the cooperating state agencies furnished inspection and supervisory personnel for the pink bollworm program in all of the states. These employees assisted in the survey, control, and regulatory

activities. Extension Service in the several states assisted in the voluntary stalk destruction program by keeping the farmers informed as to the latest requirements of the pink bollworm program, and also by conducting meetings of farmers and publicizing the need for such a program to eradicate pink bollworm infestations. The cotton industry has cooperated by willingly meeting all regulatory requirements of the state and federal quarantines for movement of the cotton crop into trade channels.

(b) Cooperative work needing strengthening another year

There is a constant need for strengthening the cultural control program. This can be done by continually pointing out the necessity of planting the crop at the prescribed time and of completing harvest of the crop and cleaning of the fields as specified. Better cooperation of cotton ginners in the non-regulated areas in providing gin trash for surveys is greatly needed. More interest in the pink bollworm program by all of the cotton industry is also needed.

2. Associated activities and services

(a) Program servicing

Division employees attended several meetings concerned with the cotton industry and discussed the various phases of the program.

III. Recommendations for the coming year

A. Survey

It is recommended that intensive surveys be continued in all cotton growing states east of the Mississippi River, where pink bollworm has not yet been found. In Arkansas and Louisiana, particularly intensive surveys should be made in counties adjoining those where infestations have been found, as well as in the known infested counties in an effort to pinpoint all incipient areas of infestation. Surveys within infested counties in Arkansas, Louisiana, Oklahoma, and Texas also will have as their purpose the location of new infestations to provide a basis for up-to-date regulatory and control actions. Survey results will be used as a guide for devising control and eradication measures.

B. Eradication or control

Cooperation with the several states concerned in conducting suppressive programs to prevent natural spread of the pink bollworm and to eradicate incipient infestations should be considerably

stepped up in an effort to halt the eastward march of the pink bollworm.

C. Regulatory

It is recommended that more emphasis be placed on the supervision of establishments concerned with the interstate movement of cotton and cotton by-products. Inspection stations at strategic locations should continue in operation during the critical periods of movement of products or materials likely to spread pink bollworm. The stations are needed particularly at the bridges across the Mississippi River and on highways leading northward into cotton producing areas such as southern Missouri and southern Illinois.

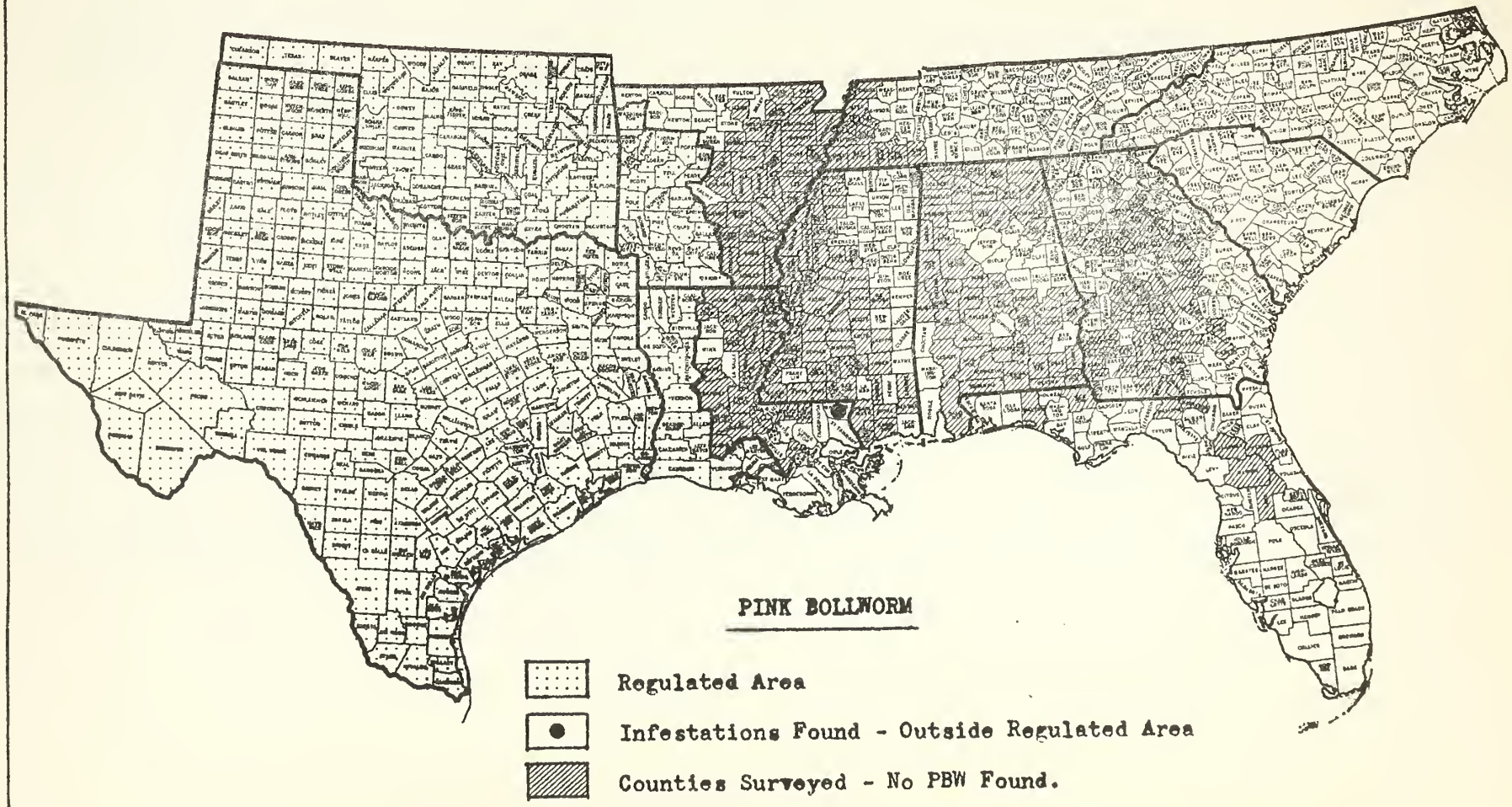
D. Methods Improvement

Improvement of control methods for the pink bollworm program are under study by the Brownsville laboratory, and as new or improved methods are devised, recommendations are forwarded to the control agencies. It is recommended that a very close liaison be maintained between the control agencies and all the various phases of research in progress at that station.

E. Associated activities

It is recommended that cooperating state regulatory agencies, particularly in cotton growing states not yet known to be infested, together with the Extension Service and other agricultural agencies that are concerned with the dissemination of information, sponsor a concerted drive to keep the cotton growers fully apprised of the pink bollworm situation and the seriousness of the pest. The cooperating Federal Plant Pest Control Division and state plant pest control agencies should be sure that all available information is furnished the agencies that have to do with publicizing information on control and eradication of the pink bollworm.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE - PLANT PEST CONTROL DIVISION
SOUTHERN REGION



Agriculture - Dodge Printing Co. Guilford, Miss.

INSPECTION SUMMARY

Program: Pink Bollworm

Region: Southern

Fiscal Year: 1958

State	GIN TRASH INSPECTION			LINT CLEANER INSPECTION					
	No. Counties	No. Bushels Trash Inspected	No. PBW Found	No. Counties		No. Inspections		No. PBW Found	
				7/1 to 12/31/57	1/1 to 6/30/58	7/1 to 12/31/57	1/1 to 6/30/58	7/1 to 12/31/57	1/1 to 6/30/58
Alabama	51	699	0	51	0	230	0	0	0
Arkansas	51	24,537	2	27	0	433	0	0	0
Florida	4	93	0	2	0	-	0	0	0
Georgia	59	1,955	0	23	0	175	0	0	0
Louisiana	33	6,795	95	14	3	1,329	73	0	0
Mississippi	48	9,260	0	38	0	1,470	0	0	0
Oklahoma	40	1,864	278	21	0	385	0	637	0
Tennessee	11	1,441	0	0	0	0	0	0	0
Texas	50	2,189	195,418	119	27	4,312	124	162,352	2,033
TOTAL	347	48,836	195,793	295	30	8,334	197	162,989	2,033

PINK BOLLWORM PROGRAM

Road Patrol Summary

TYPE	NUMBER			
	Ark.	La.	Miss.	Total (Ark. & La.)
Mechanical Pickers Passed	25	56	Quarantine stations along Mississippi River planned and directed by Mississippi State Plant Board.	81
Mechanical Pickers Turned Back	1	-		1
Picker Crews Inspected	5,384	111		5,495
Picking Sacks	4,404	495		4,899
Passenger Cars and Trucks	2,324,725	293,507		2,618,232
Cottonseed Trucks Inspected	421	278		699
Trucks Turned Back	-	2		2
Interceptions	2,116	449		2,565
Material Inspected:				
Bolls:	18,759	3,421		22,180
Cottonseed:	116#	16#		132
Seed Cotton:	416#	-		416
No. Live Pink Bollworms	272	801		1,073
Cargo and Produce Trucks	-	351		351
Okra Containers Inspected	-	6,341		6,341

REGULATORY SUMMARY

Program: Pink Bollworm

Fiscal Year 1958

Region: Southern

	Arkansas	Louisiana	Oklahoma	Texas	Total
No. Counties under quarantine	29	18	77	254	378
Estimated cotton acreage	54,674	153,521	450,000	6,560,739	7,218,934
Estimated No. growers	4,107	11,893	45,000	193,397	254,397
No. visits to processing plants	2,137	3,094	371	27,628	33,230
No. permits for movement of cotton and cotton products	2,126	12,728	1,195	11,088	27,137
No. cotton gins under dealer-carrier permit	60	98	254	1,600	2,012
No. oil mills under dealer-carrier permit	3	10	5	64	82
No. compresses and warehouses under dealer-carrier permit	23	25	26	129	203
No. vacuum fumigation plants	0	0	0	1	1
No. fumigation plants	0	0	2	21	23
No. other handlers and dealers under dealer-carrier permit	4	2	14	102	122
No. bales cotton ginned	40,473	87,911	257,418	3,490,764	3,876,566
No. gins with heaters to treat seed	56	98	0	7	161
No. mechanical cotton pickers fumigated	3	2	0	106	111

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Pink Bollworm

Region Southern

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by:

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Florida	0	0	1	0	0	0	3	0	20	0	0	0
Georgia	0	0	2	0	0	0	0	0	0	0	0	0
Louisiana	9	7	0	0	9	4	25	3	125	4,250	1,325	2
Texas	4	1	0	0	0	0	7	0	0	0	0	0
Total	13	8	3	0	9	4	35	3	145	4,250	1,325	2

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

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PINK BOLLWORM CONTROL

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PROGRAM ANNUAL REPORT
1958 FISCAL YEAR

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

ANNUAL PROGRAM REPORT

PINK BOLLWORM CONTROL

July 1, 1957 - June 30, 1958

Cooperating Agencies:

Arizona Commission of Agriculture & Horticulture
California State & County Departments of Agriculture
New Mexico State Department of Agriculture
Nevada State Department of Agriculture
Agricultural Extension Service & State Agricultural Experiment Station
Cotton Farmers & Cotton Industry of the Several States
Agricultural Research Service, U. S. Department of Agriculture

October 30, 1958
Oakland, California

Jim R. Dutton
Regional Supervisor

TABLE OF CONTENTS

HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

Accomplishments for the Fiscal Year

A general survey for pink bollworm was conducted this year throughout the cotton-growing areas of Arizona, California, Nevada, and New Mexico. This annual program is a continuing one in the Western Region and embraces all phases of survey, including bloom, green boll, gin trash, lint cleaner, and black light inspections. In Arizona a cultural control program was started this year in regulated counties subsequent to the finding of heavily infested fields in the Solomon section of Graham County. In New Mexico voluntary cultural control programs were organized in cotton-growing areas adjacent to Arizona and in a heavily infested area of Dona Ana County. Surveys in California and Nevada failed to reveal any established infestation.

Major Deviation from Work Plan

Original plans for cultural control programs in Arizona were expanded somewhat, due to the finding of heavier infestations than was originally expected. The Division's recommended work plan in California called for considerably more bloom and lint cleaner inspection than funds eventually provided for these activities would permit.

Status of Program at Close of Year

There are indications that the intensity of infestation in the infested areas is on the increase. In the Western Region at the present time, the entire State of New Mexico and all or parts of five counties in Arizona are designated as infested and are under regulation as provided by the pink bollworm quarantine. No infestation has been detected in California or Nevada. In view of the above status, the same need for continuing the program exists at the close of the year as was present at the beginning.

PROGRAM ACTIVITY DURING FISCAL YEAR

Planning and Direction

How planned and directed

All phases of the program, including inspection, recommended cultural control practices, and quarantine enforcement, are conducted in cooperation with the various State Departments of Agriculture and county agricultural and extension agencies. Conferences are usually

held between Division personnel and officials of these agencies who concur on work plans and the general program.

Technical Assistance

Technical assistance provided to farmers and others by program personnel

Program personnel provided technical assistance to farmers in regulated areas in evaluating pink bollworm infestations and by technically directing the timely application of cultural control practices. They also provided assistance to operators of cotton gins, oil mills, seed delinting plants, compresses, and other establishments in maintaining sanitary conditions and advising them on proper operation of special treating equipment required by regulations.

Technical assistance provided to program by cooperating agencies

The Departments of Agriculture of the four states involved assisted in the over-all planning and direction of the program, furnishing personnel for general survey, and enforcing cultural controls where applicable. The Extension Service of Arizona supplied personnel and informational material for presentation at several meetings and demonstrations.

Survey

Procedures or techniques used

There was no deviation from the general survey procedure. In New Mexico cotton gin lint cleaner inspection was substituted for gin trash inspection. The change was made because it was felt that adequate information could be obtained via this medium, with available personnel.

Accomplishments

In California gin trash inspection was primarily the responsibility of the state and counties, with the Division furnishing six trash machines and participating to some extent in their operation. Representative sampling was made of 106,072 acres of cotton. A limited amount of bloom, boll, and lint cleaner inspections were

also made. No pink bollworms were found. In Nevada growing of cotton is confined to the Pahrump Valley in Nye County, and to the Moapa Valley in Clark County, and consists of approximately 2,175 acres. Field inspection of this acreage failed to locate any pink bollworm infestation. In the infested State of New Mexico the emphasis was on cotton gin lint cleaner inspection. Larger numbers of pink bollworms were found in Arizona this year than in previous years.

Statement of crop losses

As aforementioned, the degree of infestation of pink bollworm in infested areas seems to be on the increase. In Dona Ana County, New Mexico, 700 acres of cotton were damaged 5 to 80 percent. Estimated loss was $7,000. This is a like example of similar situations occurring in Graham and Greenlee Counties in Arizona.

Eradication or Control

Procedures or techniques used

In areas of control, gin trash treatment by approved methods, sanitation, seed sterilization, and cultural control were the chief measures practiced.

Accomplishments

Cultural control methods were practiced in regulated areas of Arizona and New Mexico. When fields were found infested in Arizona, farmers were contacted and informed as to methods of cultural control. Deadline stalk destruction and plow-up dates were set and in most instances adhered to. In the limited area of infestation, there were less than 1,000 acres of stalks which had not been destroyed and plowed under by the prescribed deadline. In New Mexico voluntary cultural controls were applied to cotton fields in Dona Ana County and to plantings of the Virden Valley area of Hidalgo County.

Regulatory

Procedures or techniques used

In general, there were no deviations from the usual procedure. In New Mexico, however, rubber stamp quarantine certificates were issued this year to cottonseed-oil mills and cottonseed delinting plants operating under dealer-carrier agreements. These certificates were used in lieu of quarantine tags or paper certificates.

Accomplishments

Division employees assisted in checking seed sterilization; treatment of gin trash with approved type fans or by burning; cultural practices; approved commodity treatment; and sanitation at all gins, compresses, and oil mills under regulation. In Arizona, 25 gins, 6 compresses, and 1 oil mill were under regulation and complied adequately with applicable regulations. Permits were issued in all regulated areas for movement of sterilized cottonseed and flat cotton from regulated gins to oil mills and compresses outside of the regulated areas.

Methods Improvement

Work performed

An effort was made to acquaint ginners with the need for obtaining a better grade of gin trash. In this respect, instruction was given in proper installation of trash diversion traps. Cage studies of moth emergence were carried out in several Arizona locations and black lights were used to a small extent in the Virden Valley.

Accomplishments

Several gins improved their cleaning systems and installed trash diversion units, which enabled inspectors to obtain satisfactory first cleaner trash. The moth emergence cages are being used to determine dates for stalk destruction and plow-up.

Other

Cooperation received during fiscal year

Major contributions received and importance to program

Arizona - The Commission of Agriculture and Horticulture cooperated in detection and survey by furnishing personnel and counsel and conducting moth emergence studies. This state agency bore the major burden of cultural control enforcement.

New Mexico - The State Department of Agriculture assisted with regulatory work. County agents in the two counties conducting voluntary cultural control assisted in organizing the program.

California - The State and County Departments of Agriculture took the lead in conducting the various detection surveys and cooperated to the fullest extent.

Cooperative work needing strengthening another year

A closer working relationship, which would allow a more complete interchange of information, is needed in some areas of cooperation. At the present time, there is no state pink bollworm quarantine in New Mexico. A state quarantine would greatly facilitate the accomplishment of regulatory work.

Associated activities and services

Program servicing

Talks were given and films and visual aid material were used during the year to acquaint farmers, ginners, and others in the cotton industry with regulatory and control practices. Close cooperation was thus maintained, especially with industry, through the use of these media.

RECOMMENDATIONS FOR COMING YEAR

Survey

Organized survey in all cotton-growing areas of the Western Region should be continued on an expanded basis. Because of the immense value of the cotton crop in non-infested areas of Arizona, Nevada, and California, and the existing threat of infestation from the east, emphasis should be placed on intensive detection surveys in these areas.

Eradication

The need for compulsory controls in the eradication areas is self-evident. A 100 percent participation in cultural control is necessary to assure complete effectiveness.

Regulatory

In general, more rigid enforcement of quarantine regulations is needed in regulated areas. The need for adoption of a state quarantine in New Mexico should not be minimized.

Methods Improvement

The campaign to stimulate the action of gin owners to install approved type trash fans and trash diversion traps for collection of first cleaner trash should be continued.

Studies of moth emergence, of the use of improved light traps, of winter survival of pink bollworm under prevailing ecological conditions and the effect of irrigation practices in the areas of interest, all need more emphasis.

Other

Additional personnel are needed to carry out the above recommendations for expansion of the cooperative effort.

PINK BOLLWORM CONTROL PROGRAM
FISCAL YEAR 1958

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

FIELD ACTIVITIES

Pink Bollworm

Fiscal Year 1958

GREEN BOLL INSPECTION

State	Number of Counties	Number of Bolls Inspected	Number of Pink Bollworms Found
Arizona	6	6,181	24
California	10	114,435	0
Nevada	2	3,800	0
New Mexico	1	1,320	1
Totals	19	125,736	25

DEBRIS INSPECTION

State	Number of Counties	Number of Bolls Inspected	Number of Pink Bollworms Found
Arizona	5	13,975	66
California	0	0	0
New Mexico	0	0	0
Totals	5	13,975	66

FIELD ACTIVITIES

Pink Bollworm

Fiscal Year 1958

BLOOM INSPECTION

State	Blossoms Inspected	Properties Inspected	Acres Inspected	Number of Infested Blossoms
Arizona	89,431	69	1,222	0
California	892,933	308	20,068	0
New Mexico	567,942	100	1,582	101
Nevada	5,000	18	2,175	0

GIN TRASH INSPECTION / LINT CLEANER INSPECTION

State	Bushels Gin Trash Inspected	No. Pink Bollworms Found	No. Lint Cleaner Inspections	No. Pink Bollworms Found on Lint Cleaner
Arizona	6,795	492	165	83
California	16,595	0	770	0
New Mexico	0	0	164	1,610
Nevada	No gin trash machine operated in Nevada.			

INSPECTION SUMMARY

Pink Bollworm

Fiscal Year 1958

States	GIN TRASH INSPECTION			LINT CLEANER INSPECTION					
	No. Counties or Municipalities	No. Bushels Trash Inspected	No. PBW Found	No. Cos. or Municip.		No. Inspections		No. PBW Found	
				7/1 to 12/31/57	1/1 to 6/30/58	7/1 to 12/31/57	1/1 to 6/30/58	7/1 to 12/31/57	1/1 to 6/30/58
California	8	16,595	0	10	0	77	0	0	0
Arizona	7	6,795	492	1	0	165	0	83	0
New Mexico	0	0	0	9	0	164	0	1,610	0
Total	15	23,390	492	20	0	406	0	1,693	0

SUMMARY OF ASSOCIATED ACTIVITIES

Pink Bollworm

Fiscal Year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul*	Cir.*	Infest. Maps & Posters	
Arizona	4	2	1	1								
California	5	3	2									
Nevada	1	1										2
New Mexico												
Total	10	6	3	1								2

* Written by Federal personnel for release direct or through cooperators.

EXPENDITURES BY SOURCE AND BY ACTIVITY

Pink Bollworm

Fiscal Year 1958

	1	2	3	4	5	6	7	8
Source of Cash & Equivalent*	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
Plant Pest Control Division	$14,136	$ 382	$31,075	$400	$ 4,591	$ 150	$	$50,734
Other Organizations(Name)								
Arizona Comm. of Agric. & Hort.	936		558			770	258	2,522
California State Dept. Agric.-BE	1,000	750	8,000					9,750
State of New Mexico	300			100	300			700
Nevada State Dept. Agric.	300	100	1,500		400		100	2,400
Subtotal-Other Organizations	2,536	850	10,058	100	700	770	358	15,372
Total (of PPC & Other)	$16,672	$1,232	$41,133	$500	$ 5,291	$ 920	$ 358	$66,106

EXPENDITURES BY SOURCE AND BY ACTIVITY (Cont'd)

Pink Bollworm

Fiscal Year 1958

	1	2	3	4	5	6	7	8
Source of Cash & Equivalent*	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
Contributed Services**								
Arizona Comm. Agric. & Hort.	$4,000	$5,000	$2,200		$18,500	$1,000	$2,100	$32,800
Calif.State Dept. Agric.- BE	3,900				15,544			19,444
California Co. Depts. of Agric.	1,000		6,000		21,041			28,041
State of New Mexico		300					300	600
Counties New Mexico		500						500
Nevada State Dept.Agric.	500							500
Total	$9,400	$5,800	$8,200		$55,085	$1,000	$2,400	$81,885
Grand Total	$26,072	$7,032	$49,333	$500	$60,376	$1,920	$2,758	$147,991

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

COOPERATIVE AID RECEIVED

Pink Bollworm

Fiscal Year 1958

	1	2	3	4	5	6	7	8
State and Source of Aid	Cash and Equivalent Aid*				Total of Cash & Equivalent	Intangible Service Estimate**	Source Grand Total	Remarks
	Cash	Personal Services	Equipment & Supplies	Space				
Arizona Comm. of Agric. & Hort.		$ 1,494	$ 1,028	$	$ 2,522	$ 32,800	$35,322	
Calif. State Dept. of Agriculture		9,750			9,750	19,444	29,194	
Calif. County Depts. of Agric.						28,041	28,041	
Nevada State Dept. of Agric.		1,600	700	100	2,400	500	2,900	
State of New Mexico		600	100		700	600	1,300	
New Mexico Counties						500	500	
Total This Period		$ 13,444	$ 1,828	$ 100	$ 15,372	$ 81,885	$97,257	

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

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RHODODENDRON RUST

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PROGRAM ANNUAL REPORT
1958 FISCAL YEAR

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

ANNUAL PROGRAM REPORT

RHODODENDRON RUST

July 1, 1957 - June 30, 1958

Cooperating Agencies:

Washington State Department of Agriculture
Oregon State Department of Agriculture
Plant Quarantine Division, ARS, USDA
State College of Washington
State of Washington Experiment Station
Nurseries and Individuals

October 30, 1958
Oakland, California

Jim R. Dutton
Regional Supervisor

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HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

Accomplishment for the Fiscal Year

The rhododendron rust eradication program was started during the first week of February 1958, with the eradication effort being concentrated at the Clarke and Cranguyma Farms nurseries, Long Beach, Washington. The original eradication efforts consisted of two methods; namely, (1) intensive plant-by-plant removal of infected leaves by a crew of Plant Pest Control workers, and (2) a repeated seven-to-ten day saturation dusting of all plants at both nurseries with a ferbam-sulphur-talc mixture. The objective of the defoliation procedure was to lower the amount of inoculum being disseminated in an attempt to reduce the chances of plants becoming infected. The fungicide dusting operation was to protect new growth from becoming infected, as well as to possibly attain some control of the rust already on the leaves.

The defoliation work proved to be a very time-consuming job and instead of the planned two weeks of this activity, more than six weeks were spent on the work. At the close of the regular defoliation program, infection continued to appear on older leaves, apparently from dormant mycelia, which situation continued throughout the summer. This necessitated a continuous inspection and defoliation program which occupied much of the spare time of the full-time L/A employee stationed at Long Beach.

The dusting program may have contributed to the over-all reduction in the incidence of rust on new growth. There was no evidence, however, that the fungicide was killing active sori on the old foliage, and new infection was found on new foliage in June, indicating lack of success in the primary objective. In the early weeks of the work our attention was called to an antibiotic systemic fungicide called Acti-Dione, produced by the Upjohn Company, which has been used experimentally to control other plant rusts. This substance was tried experimentally as an aqueous spray with some success, at least sufficient so that a full scale spraying operation using a Buffalo turbine unit, was begun in June at both nurseries. Initial results appear promising. There is a definite killing of a great many active sori, and some evidence, as indicated by necrotic spots, that dormant mycelia probably are being killed in the internal leaf tissue.

In spare time following dusting, spraying, and defoliation operations, the full-time employee was engaged in a survey of rhododendrons at private plantings on the

Long Beach peninsula to determine if the rust infection had escaped from the two nurseries. One infected bush was found at a private residence. Late in June infected rhododendron plants also were found on Plant Quarantine Division postentry material at Seattle. These plants had been received from Vancouver Island, Canada.

In view of the nature of the disease, and the length of time (since 1953) that infection definitely is now known to have been present at the Cranguyma Nursery, plus the fact that infected rhododendrons undoubtedly were sold and distributed by this nursery over a wide area before a State hold order was placed on sales, there is a probability that rhododendron rust may be found later at various other locations in the Pacific Northwest, and possibly in California.

Major Deviation from Work Plan

The original work plan has been quite closely followed, the principal change having been the addition of the Acti-Dione spraying to the program. Some operations have taken more time than originally anticipated, and new procedures and adaptations have been developed in the course of the work. These were only normal developments that would occur in any new program for which there was little previous background information or experimental and research data.

Status of Program at Close of Year

The aim of the program is eradication of the disease, which it was not anticipated would be achieved during the initial operations. Definite progress has been made in achieving control, but not in attaining eradication. A continuation of the work is necessary in order to properly evaluate the progress. Considering all factors, accomplishments for the fiscal year have been satisfactory, even though indefinite. The program is under the direction of the Plant Pest Control Division with technical advice being furnished by the Plant Quarantine Division and general advisory assistance by the State Department of Agriculture. The technical advisor for the Plant Quarantine Division has visited the project regularly and his efforts have been most valuable to the program. The representative from the State Department of Agriculture also has spent considerable time on the job and in conferences and discussions on work planning. Both individuals collaborated in drawing up the original work proposal. The State Department of Agriculture furnished a substantial supply of the fungicide dust that was used in control

efforts. The supervisory official from the Plant Quarantine Division, Washington, D. C., also representing the Agriculture Research Service and the Plant Pest Control Division offices in Washington, D. C., visited the project on two occasions for policy discussions and advice on various aspects of the program.

PROGRAM ACTIVITY DURING FISCAL YEAR

Planning and Direction

How planned and directed

The original program proposal was prepared as a joint effort by the PPC State Supervisor, the Plant Quarantine Division technical advisor from the Seattle office, and the Chief Nursery Inspector, State Department of Agriculture. The Plant Pest Control Division handles all of the actual field work and over-all planning for the program, with valuable assistance in procedures being furnished by Plant Quarantine and the State Department of Agriculture.

Technical Assistance

Technical assistance provided to others by program personnel

All of the control and eradication work was done directly at the privately-owned nursery premises at Long Beach, in the course of which incidental technical advice was given to the nursery owners concerning steps to be taken to aid in the control and eradication of the disease.

Technical assistance provided to program by cooperating agencies

The Plant Quarantine Division, ARS, has furnished the principal technical advice relative to program operations, but assisted by Plant Pest Control personnel and the State Department of Agriculture. The State College Experiment Station is conducting work at Puyallup with a related rust on rhododendrons, the results of which will be valuable to the present program. Also, the program has been under constant consideration with Experiment Station staff members relative to pathological problems, identification, and various related matters.

Survey

Procedures or techniques used

Field

A survey was conducted on the Long Beach peninsula as an adjunct to the control and eradication work being done at the nurseries. The purpose was to determine if any of the rust had escaped to local rhododendrons and azaleas from the two nurseries. The time spent on the survey was whatever could be spared from the work of defoliation, dusting, and spraying. The survey was begun at Megler, at the extreme south end of the peninsula, and gradually carried on northward. The survey consisted of a systematic property-to-property and house-to-house foot-scouting of all the territory that was covered. Plants at all residences visited were given virtually a leaf-by-leaf examination. The work was very slow and tedious, requiring unusual conscientiousness and concentration on part of the surveyor in order to attempt to locate possible minute sori on any of the many hundreds of leaves of individual plants that were inspected. At the end of the fiscal year the foot-scouting survey was completed north to the Ilwaco vicinity, with most of the peninsula remaining to be completed in subsequent months.

Laboratory

Laboratory work was handled by the technical advisor supplied by the Plant Quarantine Division. The work consisted principally of microscopic identification of rusted leaf specimens found in the course of the survey on the peninsula, and those collected during the defoliation program at the two nurseries. Also greenhouse experiments were conducted with Acti-Dione to determine control results and dosages required.

Accomplishments

There are reservations concerning the control that was accomplished by the defoliation and dusting phases of the program. However, the former undoubtedly reduced the amount of inoculum by a vast amount as the infection present was probably as great or greater than in any previous year. It is likely that the dusting

program also was beneficial to some degree, but there was no apparent effect on active sori and the major objective of protecting new growth from infection was not achieved. The Acti-Dione derivatives look promising in that sori are being killed and evidence points to there being an internal kill of mycelia. The rust persists, however, in various places throughout the nurseries, with sori in very healthy condition, indicating that the material either is not fully effective in its action or the spray coverage has not been sufficiently complete to insure eradication. Progress probably can only be measured in terms of the partial success of the Acti-Dione derivatives in the spray program, but the apparent negative results in terms of control or eradication resulting from the defoliation and dusting operations also represent a form of progress and accomplishment in learning of their limitations.

Statement or table of crop losses

At the two nurseries the losses have been substantial in that retail sales of plants have been confined to those not showing outside evidence of rhododendron rust, and sales losses due to the reluctance of both operators and wholesale customers to distribute diseased stock. Several hundred bushes have been destroyed voluntarily by the nursery owners to aid in the control program, and some damage has been done to a few rhododendron varieties by the Acti-Dione spray during the first trials with this material. Also, some sulphur burn occurred as a result of the dusting activities during the hot summer weather.

Eradication or Control

Procedures or techniques used

The defoliation phase of the work was done by making a close examination of the under side of leaves of the rhododendron and azalea plants. Diseased leaves and leaves showing aberrations that indicated the possible internal presence of disease were clipped off with rose shears at the stem connection and placed in pails that each worker carried. In turn, the pails of leaves were emptied into large paper bags previously used for peat. When full, the bags were securely sealed and removed to a remote spot for the material to decompose.

Until June the fungicide dust was applied with a gasoline-powered back-pack unit. This unit was effective, but in the dusting operation, the worker was continually in a cloud of dust necessitating that he be suited in rubber garments and using full-face inhalator mask. Later, a dusting attachment was secured for the Buffalo turbine which was then substituted for the back-pack duster. The Buffalo turbine unit, which initially was used only for the Acti-Dione spraying operation, is mounted in a small Universal jeep, using a power take-off from the jeep. A vehicle as small as the jeep is necessary in order to maneuver into various small alleyways and areas in the nurseries. Even so, it was impossible to satisfactorily reach some of the bushes with full coverage of the material, and some hand spraying always was required.

Accomplishments

This portion of the report has been covered in previous information.

Regulatory

Procedures or techniques used

No formal regulatory restrictions have been imposed on an interstate or intrastate basis for rhododendrons and azaleas. An informal State hold order was imposed on stock from the two nurseries, binding them not to remove plants from the nursery that showed outside evidence of the disease. It is believed that the nurserymen have made a sincere effort to cooperate in this respect. However, with the disease being so difficult to see as minute sori in its early stages, or as dormant mycelia entirely within the leaf, the weakness of the hold order is apparent. The post-entry inspection requirements of Federal Quarantine No. 37 gives fairly good, but not complete, protection from introduction of the disease from Canada and other foreign sources.

Accomplishments

No accomplishments have been made in the way of regulatory other than those outlined under Item 1, above.

Methods Improvement

Work performed

There has been no special methods improvement program, but in the course of the work continuous improvement has been made in various techniques as a result of experience and normal adaptations to meet problems of the several procedures involved.

Other

Cooperation received during fiscal year

Major contributions received and importance to program

The cooperation by the State Department of Agriculture, the State College of Washington, and the Experiment Station, has been very good.

Cooperative work needing strengthening another year

Continued cooperation in consultation, technical assistance, and other phases leaves very little to be desired. Financial assistance could be improved upon.

Associated activities and services

Program servicing

None.

RECOMMENDATIONS FOR COMING YEAR

Survey

Survey should be continued on the peninsula until work is finished. A continuous repetitive survey appears necessary so long as the program is in operation in order to find new infection, or infection that develops from dormant mycelia following the initial work. In view of the number of infected rhododendrons and azaleas that may have been released from the nurseries prior to the 1956 State hold order, and those that have been released since that may have had dormant mycelia of the disease in the leaves, it appears likely that rhododendron rust may be found to occur at other locations in Washington, Oregon, and possibly California. As of this writing, the disease has not been reported elsewhere than on the postentry

plants at Seattle, but there has been no intensive survey and inspection such as would be necessary to locate minor or presently unnoticeable infection. In view of this situation, a more concerted effort should be made to determine if the disease does occur elsewhere, which evidence would bear heavily on deciding general policy regarding the feasibility of rhododendron rust eradication.

Eradication

The present program for defoliation to reduce inoculum does not appear to have benefits commensurate with the work entailed or expenditure of money required. It is recommended that this procedure be dropped at the end of the current program season and used only in special instances.

Likewise, the dusting program apparently has not achieved its objective, and it seems advisable that this activity should be discontinued at the end of the present season. There may possibly be some future use for the fungicide dust in special situations as an adjunct to the Acti-Dione spray program. If the control with Acti-Dione continues to be favorable, the spray program with this material should be considered the primary tool for control and eradication. New derivatives of Acti-Dione should be tried, as well as other new materials. It would be helpful if the Research Division could interest itself in the over-all rhododendron rust problem.

Regulatory

There is insufficient information on the occurrence of the disease in Washington, Oregon, and California to recommend regulatory policy. Obviously, present controls on plant movement are not adequate. The disease is difficult to detect and can exist as dormant mycelia within the leaf, with little or no outside evidence of its presence. Even the postentry requirements of two years of inspection before release may be inadequate, as the disease may be present in small quantity or as minute sori and be almost impossible to detect. The ordinary postentry inspections by State or Federal personnel might be less intensive than would be required for this particular purpose. In fact, even the most intensive examination could miss the disease.

Methods Improvement

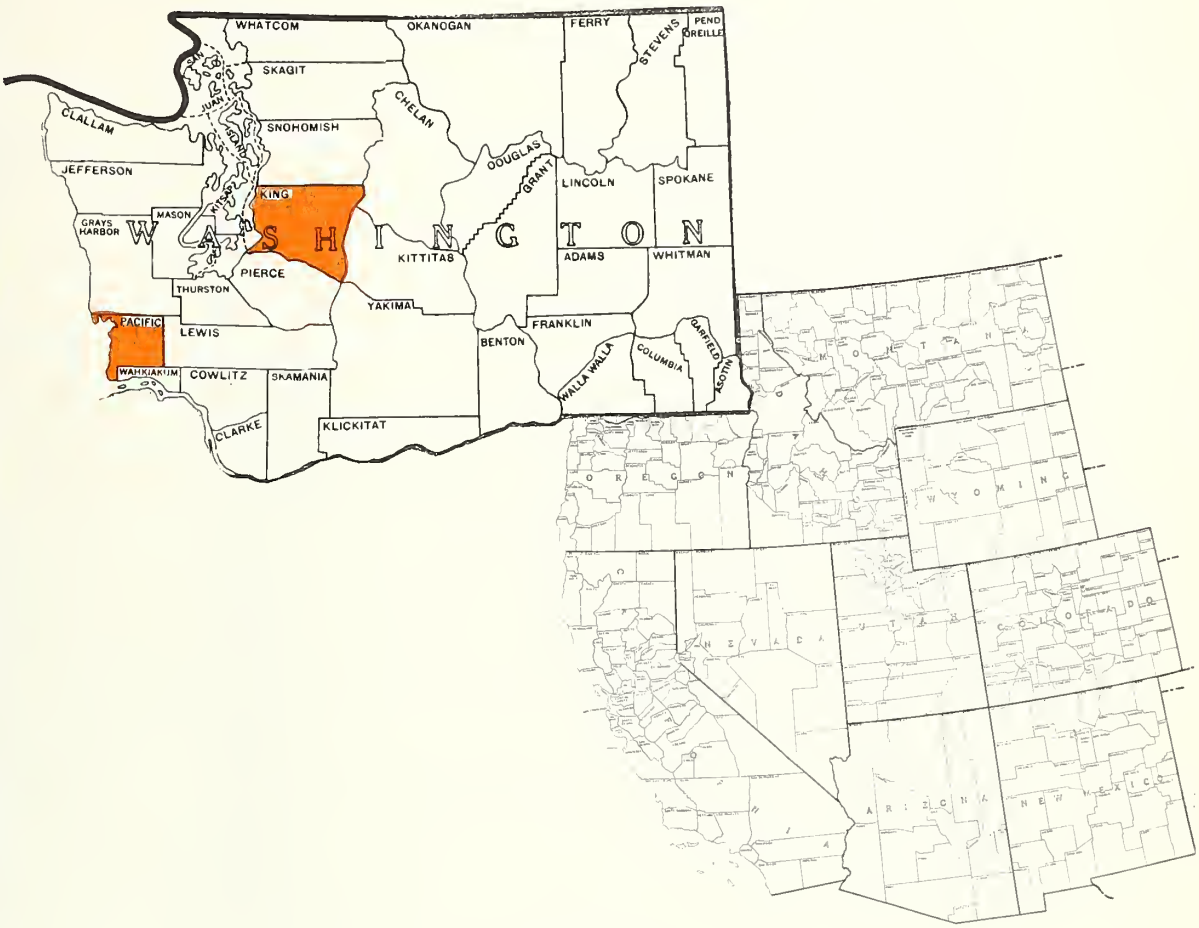
There are no particular recommendations for methods improvement. New procedures developed out of experience are progressively incorporated into the program work. Some thought is being given to possible use of "black" lights which might make rust spots fluoresce and thus facilitate difficult inspection.

Other

None.

RHODODENDRON RUST PROGRAM

FISCAL YEAR 1958



COUNTIES WHERE INFECTION KNOWN TO OCCUR

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OCTOBER 23, 1958

SUMMARY OF ASSOCIATED ACTIVITIES

Rhododendron Rust

Fiscal Year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul*	Cir.*	Infest.Maps & Posters	
Washington	4	-	-	-	-	-	-	-	-	-	-	-
Total	4	-	-	-	-	-	-	-	-	-	-	-

* Written by Federal personnel for release direct or through cooperators.

EXPENDITURES BY SOURCE AND BY ACTIVITY

Rhododendron Rust

Fiscal Year 1958

Source of Cash & Equivalent*	1 Planning & Direction	2 Technical Assistance	3 Survey	4 Control	5 Regulatory	6 Methods Improvement	7 Other	8 Total
Plant Pest Control Division	$ 1,000	$ 567	$ 284	$ 4,200	$	$ 284	$	$ 6,335
Other Organizations (Name)								
State Dept. of Agriculture	100	400		500				1,000
Subtotal-Other Organizations	100	400		500				1,000
Total (of PPC & Other)	1,100	967	284	4,700		284		7,335
Contributed Services**								
State Dept. of Agriculture	150							150
State College of Washington	100	150				100		350
Total	250	150				100		500
Grand Total	$ 1,350	$ 1,117	$ 284	$ 4,700	$	$ 384	$	$ 7,835

* Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

** Limited to services incidental to other activities for which only an estimated value is available.

COOPERATIVE AID RECEIVED

Rhododendron Rust

Fiscal Year 1958

	1	2	3	4	5	6	7	8
State and Source of Aid	Cash and Equivalent Aid*				Total of Cash & Equiv.	Intangible Service Estimates**	Source Grand Total	Remarks
	Cash	Personal Services	Equipment & Supplies	Space				
	$	$	$	$	$	$	$	
WASHINGTON								
State Dept. of Agriculture	500.00	500.00	-	-	1,000.00	150.00	1,150.00	
State College of Washington	-	-	-	-	-	350.00	350.00	
Total 7/1 to 6/30/58	$500.00	$500.00	-	-	$1,000.00	$500.00	$1,500.00	

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
CENTRAL REGION

ANNUAL PROGRAM REPORT

SOYBEAN CYST NEMATODE

July 1, 1957 June 30 1958

In Cooperation With Other
Federal, State, County and Local Agencies

November 14, 1958
Minneapolis, Minn.

R. O. Bulger
Regional Supervisor

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I. HIGHLIGHTS OF YEAR'S PROGRAM ACTIVITY

A. Accomplishment for the fiscal year

Surveys conducted by State and Federal personnel for soybean-cyst nematode were of three types plant symptom, soil sampling, and root examination. Of the total acreage checked, 170,405 acres were by soil sampling and 109,639 by symptom survey and root examination. Properties found infested number 6 in one southwestern Kentucky county and 64 in three counties located in the bootheel area of southeastern Missouri.

Two truck-mounted water-pressure units were put into service this year. They are used to wash soil and debris from farm- and other equipment moving out of known infested areas. Three additional soil-washing laboratories were put into operation in the field. These were located at Eaton, Indiana; Manhattan, Kansas; and Sikeston, Missouri.

The informational program was greatly accelerated, especially in the infested counties in Kentucky and Missouri.

B. Major deviation from work plan

None

C. Status of program at close of year

Surveys were made this year in Illinois, Indiana, Kentucky, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin, Michigan, and Ohio. After the current calendar year, Michigan and Ohio may not continue this survey work each year. No survey work was performed in Iowa under the regular State-Federal cooperative survey program, and the amount accomplished independently by that state is not available for this report. Cumulative totals to date list 7 infested properties, consisting of 860 acres in Kentucky, and 100 infested properties totaling 3,568 acres in Missouri. These infestations were found as a result of surveying a total of 357,457 acres within the Region.

II. PROGRAM ACTIVITY DURING YEAR

A. Planning and direction

This phase of the program has been the joint responsibility of cooperating State agencies and the Plant Pest Control Division personnel in each state.

B. Technical assistance

Division personnel provide technical assistance to farmers, county agents, Extension pathologists, Experiment Station personnel, soy-

bean processing firms, and others. This assistance is in the form of educational information, meetings, and personal contacts.

Cooperating agency personnel rendered valuable aid in the conduct of meetings and work conferences. Cooperating states furnishing quarters for field laboratories provided microscopes and other laboratory equipment in many instances, and, where needed, made laboratory workers available.

C. Survey

Procedures or techniques used

Symptom surveys are made by observing the areas of stunted, yellow plants in soybean fields. Such areas are further surveyed by root examination or soil sampling.

Root examination is done by lifting the plant from the soil and visually examining the roots for cysts, which can be seen without the aid of a microscope.

Soil sampling is the most common type of survey. A crew, usually consisting of 2 or 3 men, obtains soil samples from fields where soybeans have been grown continuously for several years, or from those used in rotation with other crops. These soil samples are taken to a laboratory and processed for further examination.

In Indiana and in Wisconsin, soil samples were taken from a number of fields that had grown tomato plants which originated in Tennessee and Kentucky. While the transplants did not come from known infested fields, it was considered advisable to sample the fields since both Kentucky and Tennessee have areas infested with the soybean cyst nematode.

Field laboratories have been established for the purpose of washing soil samples. Cysts of all kinds, if present, are washed into screens and the screenings are then examined microscopically. Suspected soybean-nematode cysts are sent to the Federal Soybean-Cyst Laboratory at Memphis, Tennessee, for identification. Laboratories established in the field for the purpose of washing soil samples and looking for suspected cysts were located at Springfield, Illinois; Eaton Canning Company, Eaton, Indiana; Manhattan, Kansas; St. Paul, Minnesota; Hickman, Kentucky; Sikeston and Hayti, Missouri; and Columbus, Ohio.

A total of 1,995 properties (109,639 acres) was covered in the symptom survey and root examination. Soil sampling consisted of the taking of 6,676 samples from 170,405 acres.

Cysts identified as Heterodera glycines, the soybean-cyst nematode, were found on properties totaling 1,705 acres in Missouri.

There are no available figures as to the damage this pest might cause in soybean fields in this Region. It is known, however, that many plants in infested fields are stunted and that heavy infestations of this cyst nematode can greatly reduce the total yield per field.

D. Eradication or control

Crop rotation greatly reduces the cyst population in a given field and the damage they cause. In addition to Division employees, State Departments of Agriculture and Extension Service personnel in Kentucky and Missouri have been emphasizing the importance of crop rotation, especially in areas where soybeans have been grown continuously in one field for several years.

E. Regulatory

Areas under Federal quarantine are in Fulton County, Kentucky; Pemiscot, New Madrid, and Stoddard Counties in Missouri. State and Federal inspectors check the regulated areas and keep the farmers informed concerning regulations dealing with the commodities moving from infested fields. Farmers are also kept informed as to the requirements covering the movement of machinery out of the regulated areas.

Sixty-nine cotton ginners and soybean processors signed dealer-carrier agreements in Missouri and are conforming with the requirements of the quarantine.

F. Methods improvement

Two water-pressure units--one each in Kentucky and Missouri--were obtained by transfer from the Southern Region. These units were for the purpose of cleaning soil from equipment likely to be infested with the soybean-cyst nematode, and especially when such equipment was moved from an area under quarantine.

G. Other

Seven states furnished laboratory space, where field samples could be washed and cysts examined. This space varied from a single building to a State University laboratory and in all cases was of major importance to the success of the survey program. The Eaton Canning Company of Eaton, Indiana, furnished facilities at their plant for the washing of soil samples obtained from tomato fields in that area.

Cooperative work in 12 of the 13 states has for the most part been very satisfactory. The inspection and cleaning of farm machinery could be strengthened.

Division personnel gave talks at public meetings, showed slides, appeared on the radio, prepared some news stories, distributed numerous bulletins and circulars, and made many personal contacts.

III. RECOMMENDATIONS FOR COMING YEAR

A. Survey

It is recommended that surveys be continued and that special emphasis be given to symptom survey and to the survey of fields which have a history of having been in soybeans for many years.

B. Eradication

None

C. Regulatory

None

D. Methods improvement

In addition to the two water-pressure units now in use in the regulated areas of the Region, it is planned that at least one air-pressure cleaning unit will be purchased. This air-compressor unit will be mounted on the same truck with a 400-gallon water-pressure unit. Certain harvesting equipment can be more easily and safely cleaned by air than by water pressure. Other types of farming machinery require the use of both air and water.

E. Associated activities

None

Table 1. - Soybean Cyst Nematode Survey - Fiscal Year 1958

State	Soil Survey		Plant Inspection		Infestations Confirmed	
	Properties	Acres	Properties	Acres	Properties	Acres
Illinois	727	32,741	4	90	-	-
Indiana	132	2,312	10	254	-	-
Kansas	-	-	-	-	-	-
Kentucky	680	17,977	-	-	6	810
Michigan	36	-	-	-	-	-
Minnesota	129	2,974	-	-	-	-
Missouri	4,233	99,102	5	200	64	1,705
Nebraska	62	1,171	-	-	-	-
North Dakota	-	-	450	45,000	-	-
Ohio	606	12,649	1 076	19,095	-	-
South Dakota	-	-	450	45,000	-	-
Wisconsin	71	1,479	-	-	-	-
Totals	6,676	170,405	1,995	109,639	70	2,515

Table 2. - Summary of Associated Activities - Fiscal Year 1958 - Soybean Cyst Nematode

States	Public Meetings Attended	Presentations: Talks	Presentations: Slides	Presentations: Films	Presentations: Radio	Presentations: TV	Feature & News Stories*	Extent These Aids Were Used**: Exhibits	Bulletins*	Circulars*	Infest. Maps & Posters	Special Reports
FEDERAL												
Ill.	1	1	1	-	-	-	-	-	-	247	-	-
Ind.	-	-	-	-	-	-	-	-	-	-		-
Mich.	-	-	1	-	-	-	-	-	150	640	-	1
Minn.	3	3	3	-	-	-	-	-	59	-	-	-
Mo.	8	6	4	1	-	-	3	-	1,200	12	-	3
N. Dak.	-	-	-	-	-	-	-	-	-	10	-	-
Ohio	-	1	-	-	-	-	-	3	500	-	-	-
Ky.	7	3	-	-	-	-	-		-	-	4	-
S. Dak.	3	3	3	-	-	-	-	-	-	25	-	-
Wis.	-	-	-	-	-	-	-	-	-	50	-	-
Subtotals	22	17	12	1	-	-	3	3	1,909	984	4	4
COOPERATORS												
Ill.	-	-	-	-	-	-	-	-	-	1,700	-	-
Ind.	-	-	-	-	-	-	-	-	-	100	-	-
Ohio	-	1	-	-	-	-	-	-	-	-	-	-
Ky.	7	-	-	-	-	-	-	-	-	-	-	-
Mo.	6	6	3	-	-	-	4	-	125	-	-	-
N. Dak.	1	1	1	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-
Wis.	-	-	-	-	-	-	2	-	-	-	-	-
Subtotals	14	8	4	-	-	-	6	-	125	1,800	-	-
Grand Totals	36	25	16	1	-	-	9	3	2,034	2,784	4	4

*Written by Federal personnel for release direct or through cooperators.
**This is a conservative estimate.

Expenditure by Source and by Activity - Fiscal Year 1958 - Soybean Cyst Nematode

State	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvment	Other	Total
CASH & EQUIVALENT*								
Plant Pest Control Division	$6,935.00	$10,050.00	$ 65,495.00	-	$15,250.00	$1,500.00	$ -	$ 99,230.00
Other Organizations:								
Ill.	-	-	20,124.00	-	-	-	-	20,124.00
Ind.	-	-	2,531.00	-	-	-	-	2,531.00
Ky.	-	-	800.00	-	-	-	1,200.00	2,000.00
Mich.	-	-	500.00	-	-	-	-	500.00
Mo.	1,000.00	1,430.00	5,175.00	-	4,425.00	-	870.00	12,900.00
Ohio	250.00	250.00	1,800.00	-	-	-	1,200.00	3,500.00
Subtotals	$1,250.00	$ 1,680.00	$ 30,930.00	-	$ 4,425.00	-	$3,270.00	$ 41,555.00
CONTRIBUTED SERVICES**								
Ill.	-	-	$ 600.00	-	-	-	-	$ 600.00
Ind.	-	-	800.00	-	-	-	-	800.00
Kans.	-	500.00	200.00	-	-	-	-	700.00
Ky.	500.00	500.00	-	-	1,000.00	-	200.00	2,200.00
Mich.	-	-	150.00	-	-	-	-	150.00
Minn.	500.00	500.00	850.00	-	-	-	-	1,850.00
Mo.	-	2,000.00	-	-	1,750.00	-	250.00	4,000.00
Nebr.	-	500.00	200.00	-	-	-	-	700.00
N. Dak.	100.00	-	500.00	-	-	-	-	600.00
Ohio	-	500.00	500.00	-	-	-	200.00	1,200.00
S. Dak.	100.00	-	500.00	-	-	-	-	600.00
Wis.	-	300.00	-	-	200.00	-	-	500.00
Subtotals	$1,200.00	$4,800.00	$ 4,300.00	-	$ 2,950.00	-	$ 650.00	$ 13,900.00
GRAND TOTALS	$9,385.00	$16,530.00	$100,725.00	-	$22,625.00	$1,500.00	$3,920.00	$154,685.00

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

**Limited to services incidental to other activities, for which only an estimated value is available.

Cooperative Aid Received - Fiscal Year 1958 - Soybean Cyst Nematode

State	Cash and Equivalent Aid*				Total of Cash & Equiv.	Intangible Service Estimate**	Source Grand Total	Remarks
	Cash	Personal Services	Equipment & Supplies	Space				
Illinois	$20,124	$ 0	$ 0	$ 0	$20,124	$ 600	$20,724	
Indiana	2,531	0	0	0	2,531	800	3,331	
Kansas	0	0	0	0	0	700	700	
Kentucky	7,000	3,000	0	0	10,000	1,000	11,000	
Michigan	500	0	0	0	500	150	650	
Minnesota	0	0	0	0	0	1,850	1,850	
Missouri	0	10,030	2,000	870	12,900	4,000	16,900	
Nebraska	0	0	0	0	0	700	700	
North Dakota	0	0	0	0	0	600	600	
Ohio	4,700	2,500	0	0	7,200	1,300	8,500	
South Dakota	0	0	0	0	0	600	600	
Wisconsin	0	0	0	0	0	500	500	
Totals	$34,855	$15,530	$2,000	$870	$53,255	$12,800	$66,055	

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

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Cooperative Aid Received - Fiscal Year 1958 - Soybean Cyst Nematode

State	Cash and Equivalent Aid*				Total of Cash & Equiv.*	Intangible Service Estimate**	Source Grand Total
	Cash	Personal Services	Equipment & Supplies	Space			
Illinois	$20,124	$ 0	$ 0	$ 0	$20,124	$ 600	$20,724
Indiana	2,531	0	0	0	2,531	800	3,331
Kansas	0	0	0	0	0	700	700
Kentucky	800	1,200	0	0	2,000	2,200	4,200
Michigan	500	0	0	0	500	150	650
Minnesota	0	0	0	0	0	1,850	1,850
Missouri	0	10,030	2,000	870	12,900	4,000	16,900
Nebraska	0	0	0	0	0	700	700
North Dakota	0	0	0	0	0	600	600
Ohio	2,300	1,200	0	0	3,500	1,200	4,700
South Dakota	0	0	0	0	0	600	600
Wisconsin	0	0	0	0	0	500	500
Totals	$26,255	$12,430	$2,000	$870	$41,555	$13,900	$55,455

*Limited to direct appropriation, allotments from other sources, services, and supplies for which there is an actual cash expenditure.

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Expenditure by Source and by Activity - Fiscal Year 1958 - Soybean Cyst Nematode

State	Planning & Direction	Technical Assistance	Survey	Control	Regulatory	Methods Improvement	Other	Total
CASH & EQUIVALENT*								
Plant Pest Control Division	$6,935.00	$10,050.00	$ 65,495.00	-	$15,250.00	$1,500.00	$ -	$ 99,230.00
Other Organizations:								
Ill.	-	-	20,124.00	-	-	-	-	20,124.00
Ind.	-	-	2,531.00	-	-	-	-	2,531.00
Ky.	-	-	800.00	-	-	-	1,200.00	2,000.00
Mich.	-	-	500.00	-	-	-	-	500.00
Mo.	1,000.00	1,430.00	5,175.00	-	4,425.00	-	870.00	12,900.00
Ohio	250.00	250.00	1,800.00	-	-	-	1,200.00	3,500.00
Subtotals	$1,250.00	$ 1,680.00	$ 30,930.00	-	$ 4,425.00	-	$3,270.00	$ 41,555.00
CONTRIBUTED SERVICES**								
Ill.	-	-	$ 600.00	-	-	-	-	$ 600.00
Ind.	-	-	800.00	-	-	-	-	800.00
Kans.	-	500.00	200.00	-	-	-	-	700.00
Ky.	500.00	500.00	-	-	1,000.00	-	200.00	2,200.00
Mich.	-	-	150.00	-	-	-	-	150.00
Minn.	500.00	500.00	850.00	-	-	-	-	1,850.00
Mo.	-	2,000.00	-	-	1,750.00	-	250.00	4,000.00
Nebr.	-	500.00	200.00	-	-	-	-	700.00
N. Dak.	100.00	-	500.00	-	-	-	-	600.00
Ohio	-	500.00	500.00	-	-	-	200.00	1,200.00
S. Dak.	100.00	-	500.00	-	-	-	-	600.00
Wis.	-	300.00	-	-	200.00	-	-	500.00
Subtotals	$1,200.00	$4,800.00	$ 4,300.00	-	$ 2,950.00	-	$ 650.00	$ 13,900.00
GRAND TOTALS	$9,385.00	$16,530.00	$100,725.00	-	$22,625.00	$1,500.00	$3,920.00	$154,685.00

*Limited to direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

**Limited to services incidental to other activities, for which only an estimated value is available.

(* - - *)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
EASTERN REGION

ANNUAL PROGRAM REPORT

SOYBEAN CYST NEMATODE

July 1, 1957 - June 30, 1958

COOPERATING AGENCIES:

State Plant Pest Control Agencies
Extension Service
and
Plant Pest Control Division, Crops Research Division
of the
Agricultural Research Service
U. S. Department of Agriculture

November 1958
Moorestown, New Jersey

H. L. Smith
Regional Supervisor

TABLE OF CONTENTS

I. Highlights of Year's Program Activities

A. Accomplishment for the fiscal year

Surveys for this nematode were initiated in this Region during this fiscal year. Division and cooperating personnel in the soybean growing portions of Virginia, Maryland, Delaware, New Jersey, and Pennsylvania were alert for symptoms of the soybean cyst nematode during the late summer and fall months. More extensive efforts were made in southeastern Virginia due to its close proximity to known infestation. A systematic field sympton survey was conducted by the State throughout the 15 soybean growing counties in New Jersey. Division and cooperating State personnel from New Jersey and Virginia toured infested portions of North Carolina to receive training in survey methods and procedures.

B. Major deviation from work plan

None

C. Status of program at close of year

No soybean cyst nematode infestations were found although several thousand fields were observed and many symptom areas examined and sampled.

II. Program Activity During Fiscal Year

A. Planning and Direction

The work was planned and directed for the most part jointly by State plant pest control officials and Division Supervisors.

B. Technical Assistance

1. The Division provided information, descriptive literature, and some mounted specimens for use of program personnel and interested persons. Soybean growers, county agents, and others were advised as to the nature and significance of this pest.

2. State regulatory agencies, plant pathologists, entomologists, extension and research workers evidenced keen interest in this problem.

C. Survey

1. Procedures or techniques used

a. Field

Soybean fields were observed for symptoms. Where symptoms were observed, soil and root samples were collected for complete examination. In Virginia, soil samples were collected from the perimeter of every tenth field irrespective of the absence of symptoms.

b. Laboratory

The standard laboratory procedure for processing soil samples was followed. Suspicious cysts were sent to the Division laboratory, Memphis, Tennessee, for determination.

2. Accomplishments

A total of 447 soil samples were collected from 21,229 acres observed in Virginia and 75 samples were collected from 17,800 acres observed in New Jersey. All New Jersey samples were processed with cysts of one type or another being recovered from 28 samples. Although *Schactii* group cysts were found in five samples none were identified as soybean cyst nematode. As of June 30, 201 samples from Virginia had been processed - all were negative.

D. Eradication or Control

Not Applicable

E. Regulatory

Not Applicable

F. Methods Improvement

Not Applicable

G. Other

1. Cooperation received during fiscal year

In the aggregate, more work was accomplished by the cooperators than by Division personnel. This pest was discussed

at many meetings by extension men, county agents, and others. In some instances, the States were very active in the initial planning of the survey and in obtaining technical information for their personnel.

2. The Division should provide sub-laboratories to promptly process soil and root samples throughout soybean growing counties in the Region. Additional funds and personnel should be provided. An intensive study of growing and marketing practices which may have a bearing on the spread of this pest should be made.

III. Recommendations for Coming Year

A. Survey

The items listed above under cooperative work needing strengthening are applicable. Surveys should be expanded, particularly in the southern part of this Region.

B. Eradication or Control

Not Applicable

C. Regulatory

Not Applicable

D. Methods Improvement

Not Applicable

E. Associated Activities

Not Applicable

TABLE #1

EASTERN REGION — SOYBEAN CYST NEMATODE — FISCAL YEAR 1958

STATE AND COUNTIES	SOIL SURVEY		PLANT INSPECTION		INFESTATIONS CONFIRMED	
	Properties	Acres	Properties	Acres	Properties	Acres
A	B	C	D	E	F	G
Virginia	447	8,940	344	12,289	0	0
New Jersey	75	1,000	1,225	16,800	0	0
Total from July 1 to 6/30/58	522	9,940	1,569	29,089	0	0
Total from beginning of program	522	9,940	1,569	29,089	0	0

PPC 7-12

- - -

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

SOYBEAN CYST NEMATODE

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishments for the fiscal year

Since the soybean cyst nematode has been discovered only recently in the United States, having been found in New Hanover County, North Carolina, in August 1954, the primary objective for the 1958 fiscal year was the continuation of an overall survey which began in 1956 following discovery of the pest in Lake County, Tennessee. Surveys were planned for all the major soybean-growing areas of the states of the Southern Region, and by the end of the report period these surveys had been made in 228 counties of 10 states. The surveys were of two types: (1) the soil survey method in which samples of soil were taken from suspected fields and which was used in surveying 313,177 acres on 9,051 properties; and (2) the plant symptom detection method which was used in surveying 257,878 acres on 13,131 properties. Additional infested acreage totaling 9,293 acres on 212 properties was found in 4 states. The only newly infested counties found during the year were De Soto County, Mississippi, where 1 property was found, and Camden County, North Carolina, where 4 properties comprising 225 acres were found.

B. Major deviation from Work Plan

None

C. Status of Program at close of year

The soybean cyst nematode had been found on 348 properties representing 14,237 acres in 17 counties of Arkansas, Mississippi, North Carolina, and Tennessee.

Because of the high cost of fumigating or treating land with nematocides, little has been done in the way of control of soybean cyst nematode in the infested areas except to urge farmers to practice a plan of crop rotation so that soybeans and other susceptible crops are kept off infested land for 3 or more years. This pest caused very little concern during the year due to abundant moisture that prevailed throughout the year which, together with high fertilization, offset root damage by the pest. Some injury was noted, however, in sections of northwest Tennessee, although these symptoms for the most part disappeared after several heavy, general rains. The fact should not be minimized, however, that this is a serious pest and during periods of dry weather can cause heavy losses or even complete crop failure of soybean and other susceptible crops.

II. Program Activity During the Fiscal Year

A. Planning and Direction

In the 10 states where surveys were made, general plans had been developed previously between the Division representative and the

cooperating state officials. Such plans outlined the areas to be surveyed, the type of inspections to be made, and the procedure to be followed in the event infestations were found.

B. Technical Assistance

Assistance was provided to farmers and others interested in the production of soybeans by Division and State inspectors, by county agents, and by pamphlets and bulletins describing the pest and outlining suggested control measures.

Technical assistance to the program was provided by the Methods Improvement Section of the Region, and the Nematology Section of the Horticultural Crops Research Division.

C. Survey

1. Procedures or techniques used

Detection surveys were made in all states of the Southern Region, but more intensively in the major soybean-producing areas of Arkansas, Louisiana, Mississippi, and Tennessee, where special attention was given to the delta counties. Soil samples were taken throughout the year from fields on which soybean crops had been planted for at least 3 years. All soil samples were processed first at the washing stations that were set up at strategic points in the areas to be surveyed.

During the growing season, inspectors were on the lookout for areas or spots in fields where the yellow color and small size of plants indicated infection. The affected plants were pulled and the roots examined. Roots showing knots or enlargements, or more specifically roots showing the small white cysts, were removed and placed in vials of preservative for further examination in the Soybean Cyst Laboratory at Memphis, Tennessee.

2. Accomplishments

The soil survey was made on 9,051 properties representing 313,177 acres in 9 states, and plant inspections (or symptom surveys) were made on 257,878 acres, representing 13,131 properties in 10 states of the Southern Region. Infestations were confirmed on 212 properties comprising 9,293 acres in 4 states.

3. Statement or table of pest damage

Due to abundant rainfall throughout the crop year, damage from soybean cyst nematode was slight, and in only a few fields was appreciable damage reported. Damage is indicated

by yellow, stunted plants with a very low yield. A severe infestation is capable of completely destroying a crop. Damage is more noticeable during periods of dry weather than at any other time. If fields are highly cultivated and have an abundance of moisture, it is likely that damage will be slight or almost completely absent. There have been many instances where infested fields had such poor yields that farmers made no attempt to harvest soybeans. One infested field which was harvested averaged only 4 bushels of soybeans per acre.

D. Eradication or Control

1. Procedures or techniques used

Control or eradication of nematodes is a difficult problem. Sufficient control to permit the growing of nearly normal crops can be obtained by use of standard nematocides each year, but eradication by such chemical means is difficult and very expensive.

The plan for 1958 included: (1) advising growers to keep soybeans and other susceptible crops off infested fields; (2) vigorously carrying out provisions of the Soybean Cyst Quarantine to prevent further spread of the pest; and (3) continuing the delimiting surveys for the purpose of locating any additional infestations that may exist. This threefold plan was developed by the Plant Pest Control and Crops Research Divisions of Agricultural Research Service, with the cooperation of the Extension Service which used its facilities to support the program. It was reviewed by the Experiment Stations Division and the American Soybean Association.

2. Accomplishments

Growers who own infested properties were contacted by the inspectors and urged to follow the control plan agreed upon.

E. Regulatory

Federal Quarantine 79, regulating the movement of crops, machinery, or other equipment or commodity that might be contaminated with the cysts of this nematode, became effective July 26, 1957.

F. Methods Improvement

1. The Methods Improvement Section conducted soil fumigation studies and commodity and equipment treatments. Other studies under way on this program include an attempt to find a faster and more efficient method of collecting soil samples. In this study, several different methods were considered, including the X-pattern, the V-pattern, and collecting at random along margins of fields and at the ends of fields where equipment enters and leaves.

2. Accomplishments

No reports on accomplishments are as yet available on the fumigation and treatment studies that are presently under way.

The conclusion thus far on survey methods is that chance seems to govern the possibility of finding an infestation of low intensity, since no significant differences in methods of sampling were evident.

G. Other

1. Cooperation received during fiscal year

The cooperating state agencies assisted in the planning and direction of the program and furnished an equitable number of inspectors for the surveyors. The Nematology Section of the Agricultural Research Service continued tests on varietal susceptibility, host range, soil treatments, etc.

State plant pest control agencies in all the states where surveys were made cooperated by furnishing inspectors and technicians to the extent possible in making the surveys. Laboratory space for examination of suspected cysts was furnished by several of the states. The Extension Service cooperated by disseminating program information to growers.

2. Associated activities and services

Meetings were held in numerous counties in the soybean-growing sections of the Southern Region to acquaint growers and others interested in this crop with the seriousness of the soybean cyst nematode and the recommended measures for controlling the pest until such time as more effective means can be devised.

III. Recommendations for Coming Year

A. Survey

It is recommended that surveys, particularly in the major soybean-growing sections, be continued in an effort to determine if the soybean cyst nematode is widespread, or if it is actually restricted at the present time to relatively small sections of the major soybean-producing areas. Particular emphasis should continue to be placed on the soil sample method of survey, since it is apparent that this is still by far the more effective and efficient method of detecting the presence of this pest in the soybean-growing areas. The plant symptom method serves as a guide during the growing season, and it is a very helpful method in making rapid overall surveys in large areas of soybean production.

B. Eradication or control

Eradication for the time being appears not to be feasible; therefore, it is recommended that, until such time as more information is available, the sanitation practices as outlined in Section D be followed.

C. Regulatory

The only changes recommended in the Soybean Cyst Quarantine for the coming year are extensions as necessary to include newly found infested areas. It is recommended that treatment procedures and other certification stipulations of the quarantine remain the same for the next year.

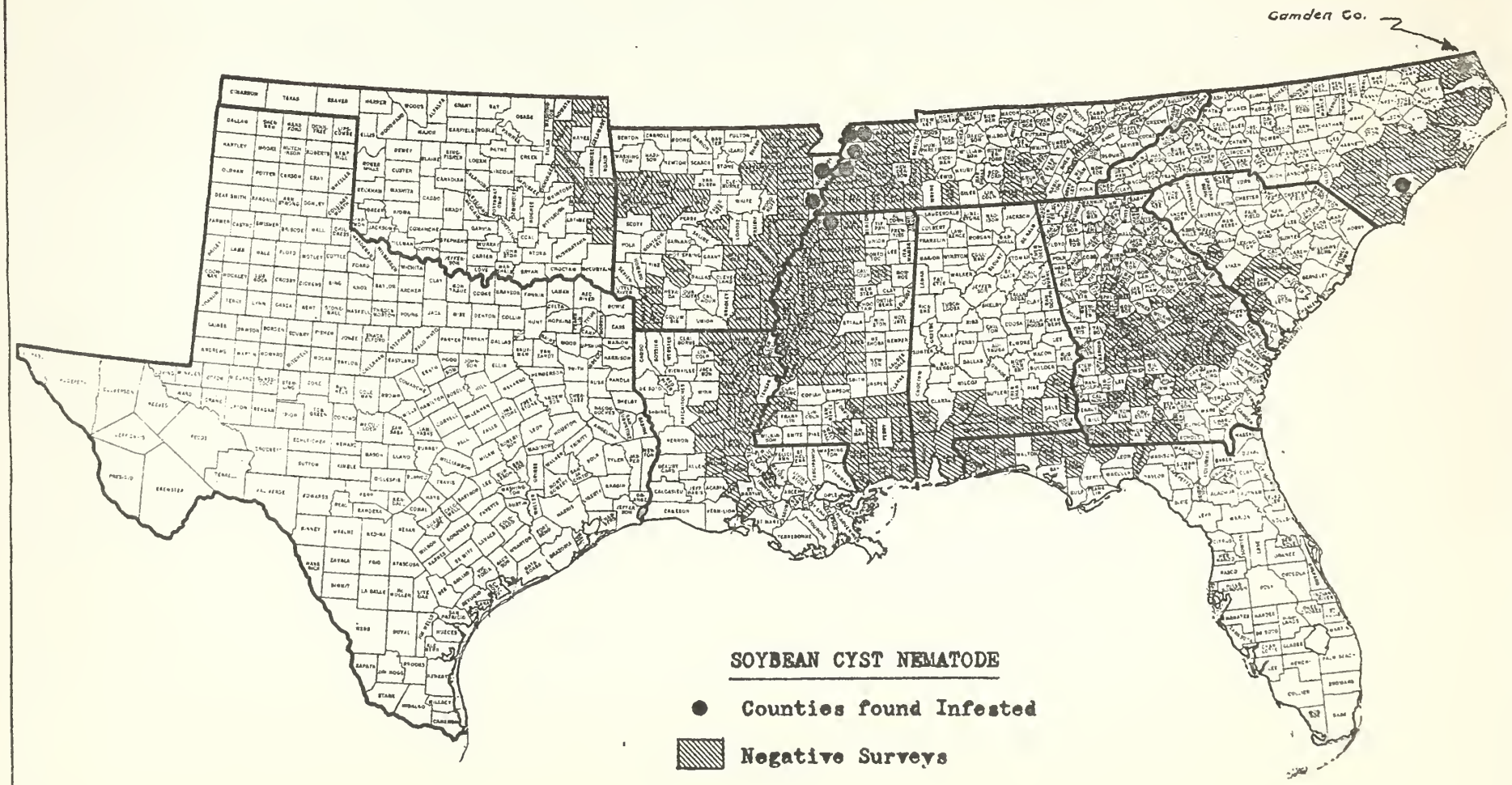
D. Methods Improvement

It is recommended that studies be continued by the Methods Improvement Section of the Division on certification treatments, as well as on the use of nematocides in soil treatments. The possibility of developing more rapid survey methods also should be given considerable study.

E. Associated activities

The soybean cyst nematode problem should be continually kept before growers and processors of soybeans because it is dangerous and during periods of low moisture can inflict serious, if not ruinous, losses to a soybean crop. At farmer meetings, the soybean cyst nematode problem should be brought up whenever possible in order to keep the farmers fully aware of potential destructiveness of this pest and the measures being used to control it.

SOUTHERN REGION
PLANT PEST CONTROL DIVISION



SOYBEAN CYST NEMATODE

Region	Prepared by
Southern	
Period (Designate: Month, 1-15, 16-31, or 1-31)	Date prepared
Fiscal Year 1958	

STATE AND COUNTIES A	SOIL SURVEY		PLANT INSPECTION		INFESTATIONS CONFIRMED	
	Properties B	Acres C	Properties D	Acres E	Properties F	Acres G
Alabama	61	4,079	780	23,994	0	0
Arkansas	5,092	171,916	1,385	54,098	97	3,922
Florida	111	7,307	79	3,882	0	0
Georgia	129	2,316	835	20,112	0	0
Louisiana	103	6,637	38	2,856	0	0
Mississippi	854	45,880	258	24,767	1	300
North Carolina	276	5,888	8,664	94,864	15	501
Oklahoma	13	292	72	2,603	0	0
South Carolina	0	0	748	19,361	0	0
Tennessee	2,412	68,862	272	11,341	99	4,570
Total This Period	9,051	313,177	13,131	257,878	212	9,293
Total From July 1						
Total From Beginning of Program	10,925	374,656	17,853	373,775	348	14,237

PPC 7-12
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Soybean Cyst Nematode

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Florida	-	-	-	-	-	-	-	-	50	-	-	-
Georgia	-	6	6	-	-	-	3	-	200	-	-	-
Total	-	6	6	-	-	-	3	-	250	-	-	-

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

* -- *

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

SWEETPOTATO WEEVIL

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

Substantial progress was achieved in program objectives during 1958 fiscal year. Reflected in the accomplishments were the release of 1978 properties from quarantine and the release of 17 counties from infested status. Approximately 89,970 inspections were made in 158 counties, which resulted in the finding of 1,131 new infestations, including those found in 6 counties not previously known to be infested. Insecticidal treatments were made to approximately 2,000 seedbeds, 14,000 acres of sweetpotato plantings, and 1,000,000 bushels of stored sweetpotatoes.

The number of new infestations found during the year was down 49 percent from last year, and the number of new counties found infested for the first time was down 40 percent. The number of farms freed of infestation was 22 percent greater than for the previous year, and the total number of counties freed from infestation status was 183 percent greater than in 1957. Severe winter freezes followed by a wet spring destroyed volunteer and wild host plants. More land was put into compulsory host-free zones, thus reducing the number of seedbeds requiring treatment in 1958 but at the same time increasing the supervision of nonplanting areas.

B. Major Deviation from Work Plan

None.

C. Status of Program at close of year

There were 3,314 active infestations in the eradication areas at the close of the year as compared with 4,254 one year ago. This represents a decrease of 22 percent. The weevil population in the program area is the lowest since 1950, and in some states since 1932. Weevil populations in South Carolina are considered at survival level as nonplanting zones are enforced within one mile of infestations.

II. Program Activity during fiscal year

A. Planning and Direction

1. How planned and directed.

The sweetpotato weevil program is a cooperative effort between the Plant Pest Control Division and the interested states, aimed at the control of the insect (1) by its eradication

from isolated areas; (2) by population suppression measures in large areas of commercial production to prevent heavy economic losses; and (3) by quarantine enforcement to prevent spread. The program involves the states of Alabama, Florida, Georgia, Louisiana, Mississippi, and South Carolina. The basic work plans were prepared concurrently by the cooperating agencies, consistent with program needs and budget limitations. These work plans were under the direct supervision of Plant Pest Control supervisors, and were carried out by personnel located at the points of greatest need. Plans included frequent field checks, along with grower meetings, newspaper releases, and radio broadcasts to strengthen weak points in the program.

B. Technical Assistance

1. Technical assistance provided to farmers and others by program personnel.

Technical assistance was provided by program personnel to growers in the proper cleaning of sweetpotato fields, storages, seedbeds, and the treatment of seedbeds, fields, and stored sweetpotatoes. Technical assistance was also given vocational agriculture teachers in the 4-H and F.F.A. Clubs.

2. Technical assistance provided to program by cooperating agencies

The Extension entomologists with weekly newsletters to county agents assisted greatly in keeping these agents informed on current phases of weevil control. The county agents in most of the counties where work was in progress kept the sweetpotato growers informed of current control practices by weekly articles in local newspapers, and sometimes by radio. The agriculture teachers also disseminated information and taught sanitary control measures to their classes.

C. Survey

1. Procedures or techniques used

a. Field

Visual inspections for sweetpotato weevil infestations were made of potatoes in fields at time of harvest, of crop remnant in fields following harvest, of seedbeds, volunteer plants, storages, and wild host plants.

b. Laboratory

None.

2. Accomplishments

Surveys were made of 89,970 properties in 158 counties in the six affected states; and 1,131 new infestations were found in 85 counties, including 6 counties where infestations were found for the first time. Negative surveys were made in 73 counties, including 17 that were found free of infestation. Quarantine restrictions were removed from 1,978 properties.

3. Statement or table of pest damage

The estimated loss to commercial shippers due to weevil damage during the fiscal year was reduced from 2.50 million dollars to 1.25 million dollars. It is difficult to estimate the damage to non-shippers who represent the largest segment of the sweetpotato industry.

D. Eradication or Control

1. Procedures or techniques used

The elimination of the sweetpotato weevil from eradication areas was accomplished by enforcement of nonplanting zones, supplemented by sanitation measures and insecticidal treatments. These procedures were supported by the Standard State Sweetpotato Weevil Quarantine.

In the control areas, the populations of the insect were reduced through the use of certified or approved plants, supported by cleanup of host plants, stored potatoes, and seedbeds, and the use of insecticides in field plantings, seed beds, and storages.

2. Accomplishments

The reduction in the number of infested properties in the eradication areas from 4,254 at the beginning of the year to 3,314 at the end of the year was one of the major accomplishments of the eradication efforts. Seventeen counties were released from infestation status, and weevil damage was reduced by about 50 percent.

E. Regulatory

1. Procedures or techniques used

The regulatory procedures employed were in accordance with quarantines promulgated by and for the authority of the states concerned. Program personnel assigned to regulatory functions made numerous visits to farms, processing plants, and shipping points to insure that potatoes were being

handled in such a way as to meet quarantine requirements as to production, storage, and shipping.

2. Accomplishments

Certificate permits were issued for the movement of 4,000,000 bushels of sweetpotatoes. Cleanup work included 12,519 storages, 8,471 seedbeds, and 61,617 acres of field plantings. Insecticidal treatments were applied to 2,073 seed beds, 13,805 acres of planting, and 1,007,001 bushels of stored potatoes. All violations were handled without recourse to legal action, except for two truckers who were fined $700 each for moving infested potatoes interstate.

G. Other

1. Cooperation received during fiscal year

a. Major contributions received and importance to program (other than funds).

The Extension Service through its agents, including vocational agriculture teachers, contributed greatly to the educational phases of the program through their publicity campaigns in bringing to the sweetpotato industry the current eradication and control recommendations. The sweetpotato industry purchased DDT, dieldrin, and methyl bromide, and furnished the labor for the applications.

b. Cooperative work needing strengthening another year

More funds are needed for survey expansion and intensification and for more detailed application of eradication and control measures to insure quicker eradication accomplishments.

2. Associated activities and services

a. Program servicing

This probably can be done best by supplying program information of a local nature to the county agents, who usually have weekly columns of interest in local papers which are read generally by farmers. Agricultural reporters for large newspapers, radio and TV stations can be helpful in this respect when timely program information is available.

(1) Evaluation

Such services are most difficult to accurately evaluate but the dissemination of information is a recognized educational process, and the success of the program is attributed largely to these factors.

III. Recommendations for coming year

A. Survey

Additional personnel should be made available for more extensive and intensive surveys in both noninfested and infested counties for detection and progress purposes since survey is highly essential to the success of the sweetpotato weevil program.

B. Eradication or control

None.

C. Regulatory

None.

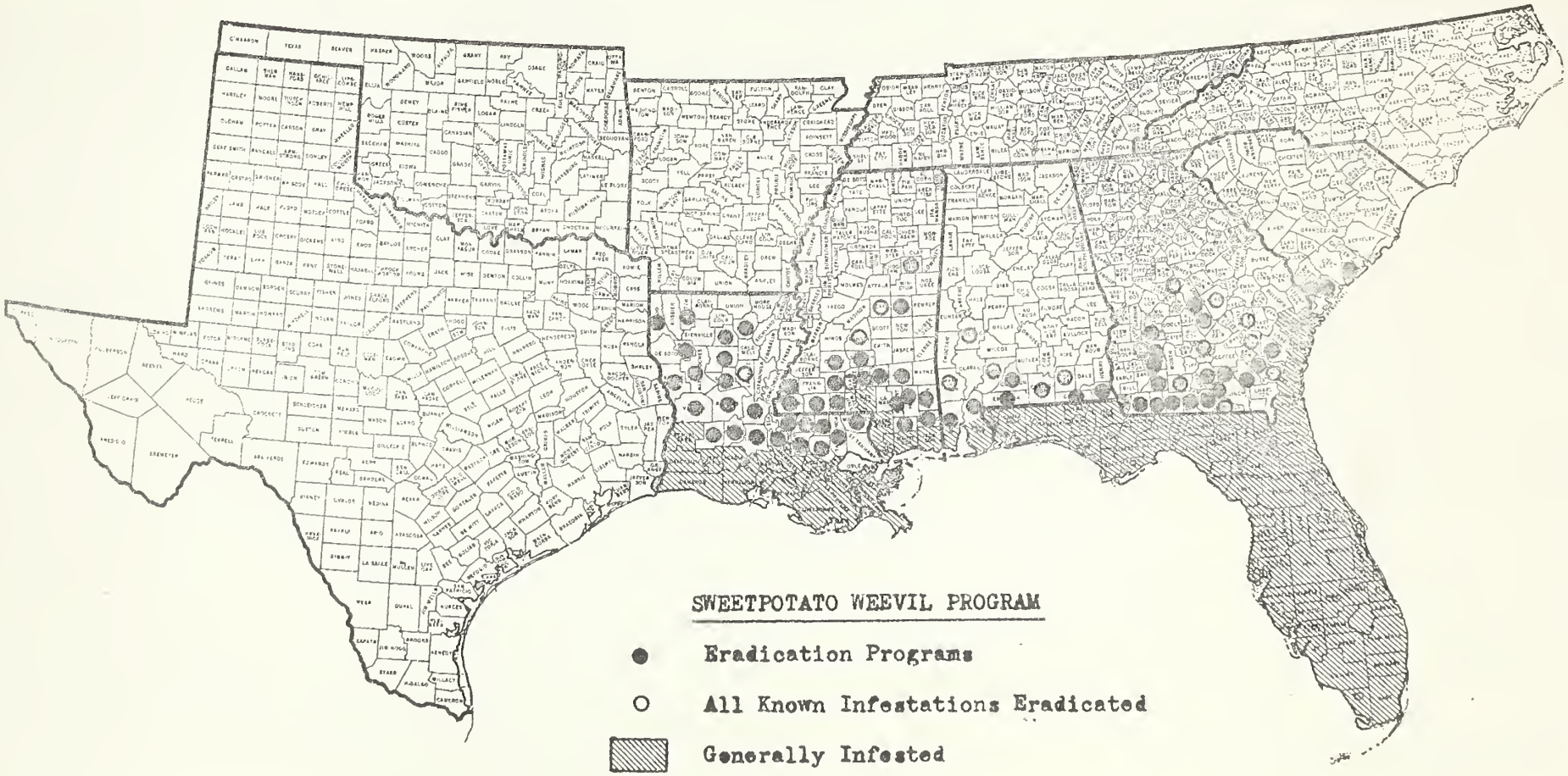
D. Methods Improvement

More publicity should be given to the use and methods of insecticidal control in the fields.

E. Associated Activities

It is recommended that public meetings, talks, radio and newspaper articles, and the distribution of circulars be increased during the next fiscal year.

SOUTHERN REGION
PLANT PEST CONTROL DIVISION



SWEETPOTATO WEEVIL

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1958

Date prepared:

STATE COUNTY LOCALITY A	SURVEYS Properties Inspections B	Infested C	Released D	Active at Close E	CONTROL Cleaned Storage & Kilns F	Seedbeds G	Acres H	Insecticides Applied Seedbeds I	Acres J	Dusted Bushels K
Alabama	4,479	106	298	205	445	211	1,098	104	198	5,816
Florida	359	22	48	468	13	0	0	26	257	2,926
Georgia	4,004	237	343	312	656	75	1,387	93	1,767	39,523
Louisiana	72,531	644	1,242	2,031	11,104	8,076	58,750	1,845	11,479	958,702
Mississippi	8,234	117	44	265	301	109	270	5	101	34
South Carolina	363	5	3	33	0	0	112	0	3	0
Total This Period	89,970	1,131	1,978	3,314	12,519	8,471	61,617	2,073	13,805	1,007,001
Total From July 1										

PPC 7-19
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF ACRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Sweetpotato Weevil

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Florida	2	1	1	0	0	0	48	0	50	0	0	0
Georgia	10	7	5	0	8	1	23	5	0	360	206	0
Louisiana	10	8	0	0	0	0	10	2	150	3,900	400	2
Total	22	16	6	0	8	1	81	7	200	4,260	606	2

*Written by Federal personnel for release direct or through cooperators.
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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

SWEETPOTATO WEEVIL

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

Substantial progress was achieved in program objectives during 1958 fiscal year. Reflected in the accomplishments were the release of 1978 properties from quarantine and the release of 17 counties from infested status. Approximately 89,970 inspections were made in 158 counties, which resulted in the finding of 1,131 new infestations, including those found in 6 counties not previously known to be infested. Insecticidal treatments were made to approximately 2,000 seedbeds, 14,000 acres of sweetpotato plantings, and 1,000,000 bushels of stored sweetpotatoes.

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B. Major Deviation from Work Plan

None.

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There were 3,314 active infestations in the eradication areas at the close of the year as compared with 4,254 one year ago. This represents a decrease of 22 percent. The weevil population in the program area is the lowest since 1950, and in some states since 1932. Weevil populations in South Carolina are considered at survival level as nonplanting zones are enforced within one mile of infestations.

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C. Regulatory

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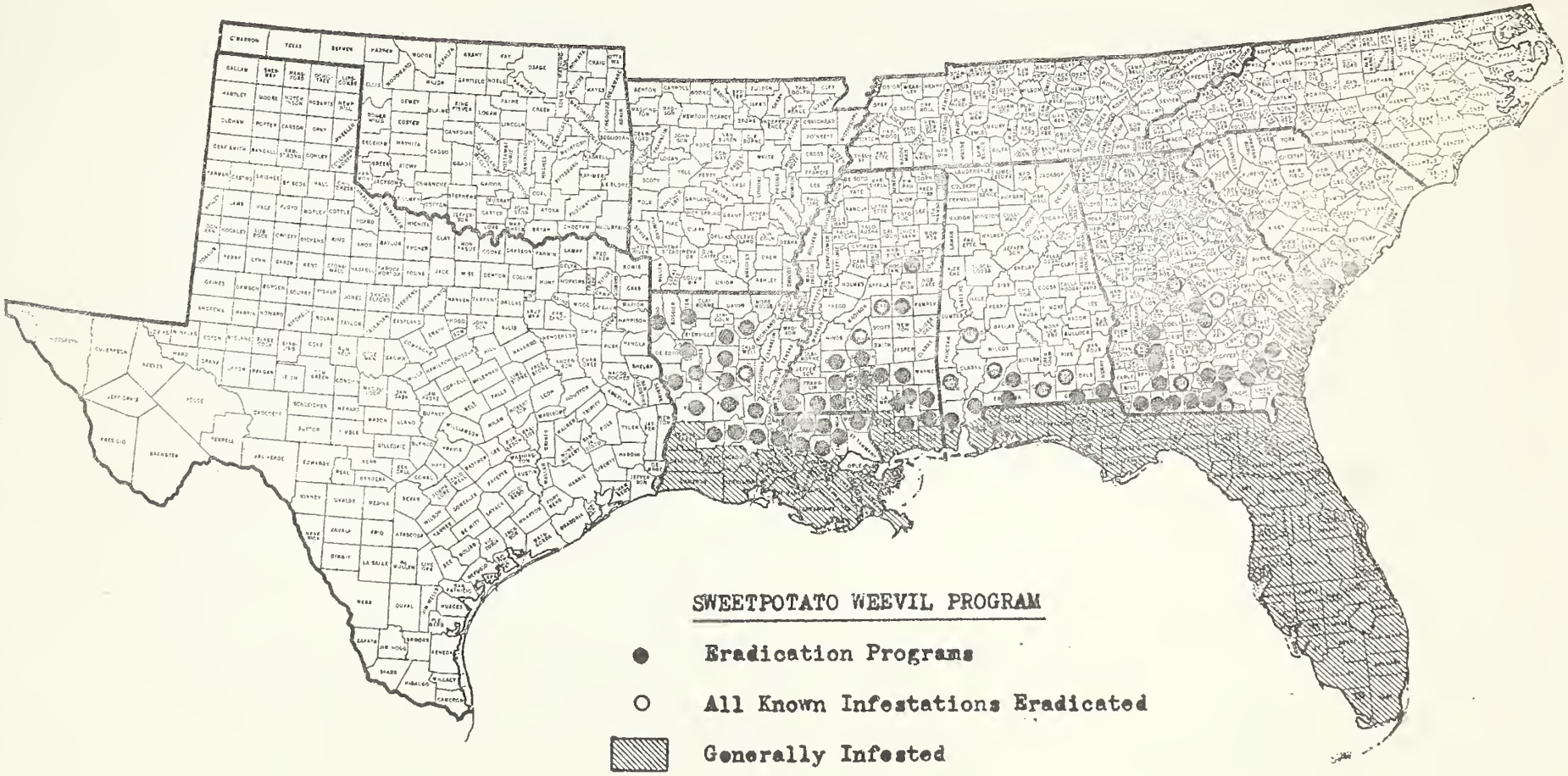
It is recommended that public meetings, talks, radio and newspaper articles, and the distribution of circulars be increased during the next fiscal year.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



SWEETPOTATO WEEVIL

Region	Prepared by
Southern	
Period (Designate: Month, 1-15, 16-31, or 1-31)	Date prepared
Fiscal Year 1958	

STATE COUNTY LOCALITY A	SURVEYS				CONTROL					
	Properties				Cleaned			Insecticides Applied		
	Inspections B	Infested C	Released D	Active at Close E	Storage & Kilns F	Seedbeds G	Acres H	Seedbeds I	Acres J	Dusted Bushels K
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Total From July 1										

PPC 7-19
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Sweetpotato Weevil

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
EASTERN REGION

ANNUAL PROGRAM REPORT

WHITE-FRINGED BEETLE

July 1, 1957 - June 30, 1958

COOPERATING AGENCIES:

State Plant Pest Control Agencies
Extension Service
and
Plant Pest Control Division
Agricultural Research Service
U. S. Department of Agriculture

November 1958
Moorestown, New Jersey

H. L. Smith
Regional Supervisor

TABLE OF CONTENTS

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

All-out efforts were continued to eradicate the white-fringed beetle infestation at Vineland, New Jersey. During the summer of 1957 surveys covering virtually every foot of the previously known infested properties revealed the presence of only two adult beetles. Though alive, both specimens were apparently in a poisoned state and it is considered unlikely that they would have survived. Cursory larval surveys throughout the previously infested area and selective adult inspections outside the infested area proved negative.

Regulatory measures, as authorized by a State of New Jersey quarantine order, were employed tc prevent both localized and long distance spread of the beetle.

B. Major deviation from work plan

There was no deviation from work plan.

C. Status of program at close of year

The only known infestation in this Region was discovered in 1954 at Vineland, New Jersey, where beetles were found in three small areas encompassing less than 50 acres. The infested sites, together with bordering farmland totaling 350 acres, were treated for eradication in 1955. Within the treated area a few beetles were found at two locations in 1956. Both locations were retreated the same year. In July of this reporting period single beetles were found at two other locations within the treated area. As a consequence, both sites were retreated. Subsequent surveys conducted throughout the entire area, since retreatment of those two sites have been negative. Surveys at selected locations outside the area of infestation have also been negative.

II. Program Activity During Fiscal Year

A. Planning and Direction

1. Program activities were planned and directed jointly by State cooperators and PPC personnel. Division inspectors participated in the survey work incidental to other duties.

B. Technical Assistance

1. Division and State personnel advised farmers and shippers regarding regulatory requirements and control measures to prevent spread of the insect.

2. The Southern Region temporarily assigned an experienced specialist to advise on survey and control methods.

C. Survey

1. In the original area of infestation cultivated fields and bordering areas are intensively inspected by foot-scouting during the adult season. Field crops are inspected row-by-row and bordering areas are covered systematically. Observations for grubs are made on freshly tilled land during the spring plowing season. Suspect specimens are submitted to the Entomology Research Division for determination.

2. All properties previously found infested and bordering environs, involving an area of approximately 350 acres, were intensively inspected. Cursory inspections were also made at several selected locations in surrounding areas. A total of 25 properties was scouted.

   Cursory surveys were also made at 96 selected sites in the southeastern section of Virginia, in conjunction with other program surveys.

3. No crop damage attributable to the white-fringed beetle was observed.

D. Eradication or Control

1. With complete eradication as the objective, 10% granular dieldrin was applied at the rate of 50 pounds per acre on two spots aggregating less than one-half acre where two beetles were recovered in July. Application was by hand-broadcast.

E. Regulatory

1. The quarantine order pertaining to infested properties and regulating movement of products from them, issued by the New Jersey Department of Agriculture, remains in effect. This quarantine closely parallels provisions of the Federal quarantine.

2. During the reporting period Federal and State inspectors made frequent checks on movements of products to assure continued compliance with quarantine requirements.

F. Methods Improvement

Not Applicable

G. Other

1. Cooperation received

The State of New Jersey continued to support fully the all-out effort to eradicate this pest, and furnished all full-time men engaged on scouting and eradication activities. Growers and property owners cooperated fully with regulatory and survey activities.

2. Associated Activities

Bulletins were provided to all concerned and interested. Contacts were maintained and progress of the work was discussed with county officials and local growers.

III. Recommendations for Coming Year

A. Survey

It is recommended that (1) survey operations in the infested areas be continued on the same scale as in previous years, and (2) detection surveys in other sections of the Region, particularly southern sections, be expanded.

B. Eradication and Control

Continue the all-out effort to eradicate the insect in New Jersey.

C. Regulatory

Continue regulatory measures now in effect.

D. Methods Improvement

Not Applicable

E. Associated Activities

Expand use of bulletins and visual aids to inform and alert farmers.

WHITE-FRINGED BEETLE

EASTERN REGION

FISCAL YEAR 1958

Page 1 of 2 pages

STATE COUNTY LOCALITY A	SITES INSPECTED Nursery B	SITES INSPECTED Other C	ACRES OF NEW INFESTATION Nursery D	Farmland Tilled E	Farmland Untilled* F	Woodland G	Industrial & City H	Total I
New Jersey	-	25	-	-	-	-	-	-
Virginia	-	96	-	-	-	-	-	-
Total	-	121	-	-	-	-	-	-
Total from Beginning of Program	4	394	-	30	20	-	-	50

*Woodland excluded.

Page 2 of 2 pages

STATE COUNTY LOCALITY A	Nursery B	ACRES TREATED WITH INSECTICIDES (First Treatment) FARMLAND (Include Woodland) With Ground Equipment Broadcast Insecticide Only C	With Fertilizer D	With Aircraft E	NON-FARMLAND Surface F	With Aircraft G	Foliage H	ACRES OF RETREATMENT I
New Jersey	-	-	-	-	-	-	-	0.25
Total	-	-	-	-	-	-	-	0.25
Total from Beginning of Program	-	155.30	-	-	-	154	77	81.75

PPC 7-13 & 13a

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

WHITE-FRINGED BEETLE

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

Surveys for the white-fringed beetle were conducted in all of the states of the Southern Region, with the exception of Oklahoma. Although extensions to known infestations were found in several counties, only 7 newly infested counties were found during the year. Two of these counties are in Alabama, 1 in Florida, 2 in Georgia, 1 in Louisiana, and 1 in Mississippi. Clayton County, Georgia, one of the newly infested counties, had been infested previously, but had been dropped due to 3 years of negative survey. No infestations were found in Arkansas or Texas. In the newly infested counties, and also in the extensions found in known infested counties, the additional infested acreage found during the 1958 fiscal year amounted to 47,701. Control or eradication soil treatments were applied to 54,093 acres, and foliage treatments were made to 40,039 acres. Eradication appeared to have been accomplished in 5 counties of 2 states.

B. Major deviation from Work Plan

White-fringed beetle eradication programs were conducted in much the same manner as in previous years. The only deviation was the combination treatments made in connection with the new Imported Fire Ant Program, in which instances sufficient amounts of insecticide were used to eradicate both white-fringed beetle and imported fire ant infestations.

C. Status of program at close of year

At the end of the year, white-fringed beetle infestations were known to occur in 203 counties of 8 states in the Southern Region. The known infested acreage in these counties is 642,046, which is the accumulated acreage from the beginning of the program through June 30, 1958. An analysis of this infested acreage shows that on 184,540 acres, or 29 percent, no specimens of white-fringed beetles could be found; on 286,321 acres, or 44 percent, populations were extremely light; on 140,477 acres, or about 22 percent, the population was classed as moderate; and that only on 30,708 acres, or about 5 percent, were populations sufficiently heavy to cause economic damage.

Post-treatment surveys made during the year indicate that eradication has apparently been accomplished in 4 counties in Alabama, 1 county in Georgia, and in wide areas of numerous other counties in those states as well as in the other infested states. An all-out campaign to treat all infested acreage in the two Carolinas and in Tennessee was under way at

the end of the year or was planned for starting early in the new year. Most of the untreated acreage in the state of Tennessee was in the city of Memphis, and city authorities had approved the all-out eradication campaign. In Alabama, Florida, Georgia, Louisiana, and Mississippi, many thousands of acres infested with white-fringed beetles were being treated in connection with the Imported Fire Ant Program. A high percentage of these acres were in wooded areas where it would have been difficult to organize white-fringed beetle eradication programs.

Although progressive treatments of infested acreages in crop and nursery areas have kept damage from white-fringed beetles to an extremely low point for a number of years, the fact should not be overlooked that this is a dangerous pest of a wide variety of crops throughout the southern half of the United States.

II. Program Activity during fiscal year

A. Planning and direction

1. How planned and directed

Over-all plans and general directions for the White-Fringed Beetle Program, as in past years, were discussed and developed by the state supervisors and the cooperating state plant pest control and quarantine officials. These plans outlined the areas of the states where surveys would be conducted and the areas proposed for eradication treatments, and designated certain heavily infested sections where cooperative control measures would be applied for general population reduction and crop protection. Operational details were carried out by district inspectors of the cooperating agencies.

B. Technical assistance

1. Technical assistance provided to farmers and others by program personnel

Technical assistance to growers relative to control methods and regulatory procedures for white-fringed beetle eradication was disseminated by employees of the cooperative program and the Extension Service in connection with farmer meetings, civic club meetings, 4-H groups, vocational agriculture classes, garden clubs, school assemblies veterans' agricultural classes, and through newspaper, radio, television, and bulletins or leaflets. Visual demonstrations were given at fair exhibits and at meetings by using colored slides and films, and by actual field demonstrations showing habitat, appearance, and damage.

2. Technical assistance to program by cooperating agencies

All control procedures were based on research data of the Cereal and Forage Crop Section of the Entomology Research Division.

C. Survey

1. Procedures or techniques used

a. Field

Surveys were made in all states of the Southern Region, except Oklahoma, for the following purposes: (1) to delimit known infestations; (2) to discover new infestations; (3) to guide quarantine enforcement; (4) to determine population densities; (5) to evaluate or determine effectiveness of eradication treatments applied at isolated infestations; (6) to determine the eligibitility for certification of farm machinery, construction machinery, etc., and (7) to determine the infestation status of nurseries and other sites where regulated products are grown or stored.

There are two types of field surveys. First, the larval inspection which, for the most part, is made in areas of general infestation primarily to delimit such infestations. This method is employed in the winter and spring months of the year. The second type of field survey is referred to as the adult inspection, and this is carried on during the summer months. This latter method is used in all areas and particularly in counties not known to be infested. This method is very effective for making rapid surveys of railroad yards, farm produce centers, nurseries, school grounds, highway rights-of-way, and other susceptible locations. The typical feeding sign on the margins of the leaves of preferred host plants is the signal for making more intensive examinations at a given location.

b. Laboratory

All infestations in new counties are confirmed by a qualified entomologist.

2. Accomplishments

Surveys revealed infestations for the first time in 7 counties of 5 states. These new infestations and extensions to known infestations make a grand total of 642,046 acres in the 8-state area.

3. Statement or table of pest damage

Because of large-scale applications of insecticides to nurseries and general farmlands for the past several years, damage from the white-fringed beetle has been held to a minimum. During the past year, several instances of damage were reported in untreated localities. In Alabama, 5 acres of cotton valued at about $1,000 were reported to have been destroyed by white-fringed beetles. In Georgia, damage to vegetable and flower plants was reported, as well as isolated cases of damage to tobacco plants. In Mississippi, serious damage was found on a farm in Hinds County--so serious, in fact, that the cropland was turned into pastures. Also, a 25 percent loss was recorded in a 32-acre planting of sweetpotatoes. In Tennessee, there was some damage noted in the city of Memphis to ornamental and garden crops, and also in a small cornfield in another section of Shelby County.

D. Eradication or Control

1. Procedures or techniques used

Almost all of the control and eradication treatments during the year were semipermanent applications of chlorinated hydrocarbon insecticides in granular form. However, there were some treatments with a foliage spray in connection with certification of certain products, as well as for general insect control in community programs.

2. Accomplishments

During the year semipermanent treatments were made to 16,027 acres of farmland and 17,998 acres of nonfarmland. Also, 14,940 acres of farmland received the insecticide-fertilizer treatment. In addition, and in connection with regulatory work and community programs for general insect control, 40,039 acres received foliage sprays.

E. Regulatory

1. Procedures or techniques used

All regulatory activities of the program were carried out under the requirements of Federal Quarantine No. 72 and paralleling state quarantines. Quarantines, of course, are most important to the program in that their purpose is prevention of spread of the white-fringed beetle from infested to noninfested areas, counties, or

states. While this phase of the program is a continuing activity, the greater part of the regulatory work occurs during the winter months when nursery stock shipments are made. The main consideration during other months is the movement of various products that could become infested with adult beetles or eggs, or contaminated with soil. Regulatory inspections and treatments were made in all of the infested states to safeguard shipments of plants, soil, farm machinery, etc., to areas or states not known to be infested. Nurseries in regulated areas were kept treated with the prescribed soil applications as treatments expired in order to assure the free movement of plants. Basic requirements of Quarantine No. 72 and Administrative Instructions were revised as needed during the year. In 8 states of the Southern Region, 4,253 acres of nursery land were treated with the permanent or semipermanent insecticide treatments during the year.

F. Methods Improvement

1. Work performed

Further attention was given in all areas to the use of granular insecticides with long residual effect for treating nurseries, railroad yards, highway rights-of-way, and the wooded environs of nurseries and cultivated fields, instead of the repeated foliage applications of liquid sprays.

Coordination of several phases of the White-Fringed Beetle Program with related activities of the new Imported Fire Ant Program was given careful consideration in all treatment areas of the White-Fringed Beetle Program.

2. Accomplishments

By the end of the year, the permanent-type treatment with granular materials had largely replaced the repeated foliage spray method formerly used for treating nursery environs, highways, etc.

Coordination of surveys and treatments with similar operations of the Imported Fire Ant Program resulted in savings in supervision, travel, labor, materials, and equipment costs. In addition, it was possible to treat white-fringed beetle infestations in wooded areas where it would have been difficult, if not impossible, to elicit cooperation from the owners of such lands because they are unable to detect appreciable damage.

G. Other

1. Cooperation received during the fiscal year

Plant pest control agencies of the several infested states cooperated by assigning both full-time and temporary personnel to assist in making surveys and supervising control operations. Other federal and state agencies cooperated by furnishing insecticides and labor for treating lands owned or operated by them, calling meetings of farmers to discuss control programs, distributing bulletins and pamphlets, and radio and television discussions. Private concerns and individuals cooperated by purchasing materials and assisting in application of insecticides on their own properties. Counties and municipalities cooperated by purchasing materials for treatments within cities and on city- or county-owned properties, and also by furnishing storage space for insecticides.

2. Associated activities and services

To encourage local participation in the White-Fringed Beetle Program, the following activities played an important part: (1) attendance at public meetings, (2) presentations of talks, color slides, films, (3) appearances on radio, (4) feature and news stories, (5) presentation of exhibits, and (6) distribution of bulletins, circulars, maps, and posters. In 5 of the infested states, 75 public meetings were attended, 55 talks were made, and color slides on various phases of the program were presented at 60 meetings. The film on white-fringed beetle was shown at one meeting; 15 radio discussions were made; and 151 feature and news stories on various phases of the program appeared in newspapers. Exhibits were placed at 20 county and state fairs, and 345 bulletins, 275 circulars, and 51 maps and posters were distributed to interested or affected organizations or individuals.

III. Recommendations for Coming Year

A. Survey

Surveys should be continued to locate new infestations and delimit known infestations in order to plan control action and guide quarantine enforcement; to determine population density; to evaluate or determine the effectiveness of eradication treatments applied at isolated infestations; to determine the eligibility for certification of farm machinery, construction machinery, and incidental shipments; and to determine the infestation status of nurseries and other sites where regulated products are grown or stored.

B. Eradication or control

All of the control and eradication treatments should be the permanent or semipermanent treatment using the granular form of one of the chlorinated hydrocarbon insecticides with long residual properties. A particular effort should be made to enlist the aid of cities and municipalities in a cooperative program to eradicate infestations within such cities or towns. Plant growers, farmers, nurserymen, and others likely to be affected by damage from white-fringed beetle infestations, should be frequently contacted relative to the seriousness of this pest. For the past several years damage has been slight which has caused interest to wane in many instances. Every effort should be made, therefore, to maintain an active interest in control or eradication programs against this pest, since it is capable of causing serious damage to complete loss to certain crops.

C. Regulatory

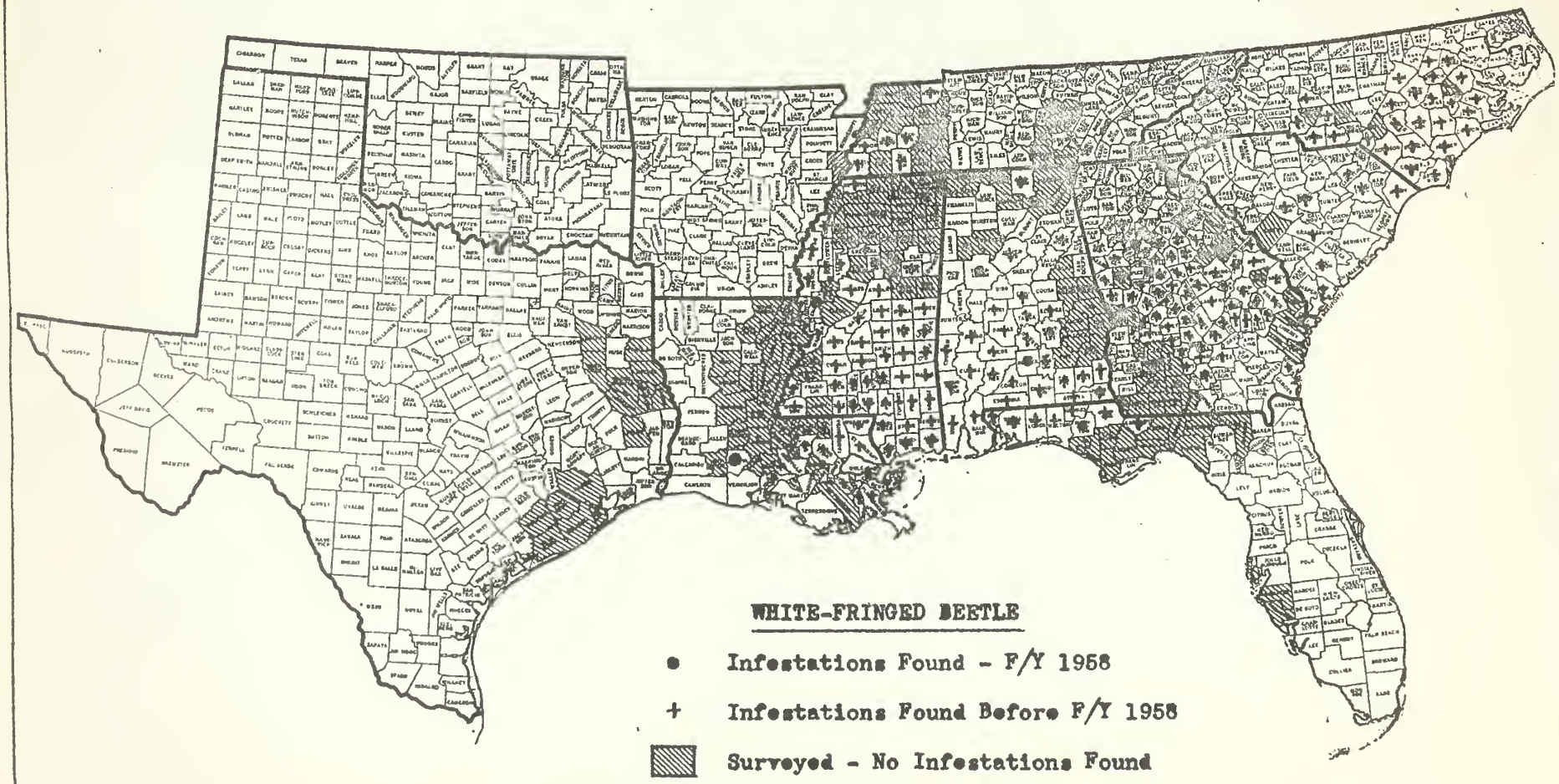
No changes recommended at this time.

D. Methods Improvement

Studies should be continued to develop more effective detection methods in order that incipient infestations may be located earlier than is possible at present. If such methods can be developed, treatments could be made much more effectively and at much less cost than is now possible, since in most instances infestations cannot be detected until the population has built up considerably. Cooperating state, county, and municipal agencies, as well as individuals, should be encouraged to continue an active campaign against this serious insect pest through meetings, by displays of infested materials, by radio and television talks, and by county agents' newsletters, pamphlets, and circulars.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



WHITE-FRINGED BEETLE

Region	Prepared by
Southern	
Period *(Designate: Month, 1-15, 16-31, or 1-31)*	Date prepared
Fiscal Year 1958	

STATE COUNTY LOCALITY A	SITES INSPECTED		ACRES OF NEW INFESTATION					
	Nursery B	Other C	Nursery D	Farmland		Woodland G	Industrial & City H	Total I
				Tilled E	Untilled* F			
Alabama	350	10,000	17	6,980	577	2,958	2,263	12,795
Arkansas	0	215	0	0	0	0	0	0
Florida	0	694	0	5,251	4,025	2,415	413	12,104
Georgia	4	1,340	10	6,172	1,707	578	2,543	11,010
Louisiana	63	1,738	0	534	140	45	108	827
Mississippi	174	8,175	0	1,304	1,744	1,412	2,441	6,901
North Carolina	-	3,367*	1	1,419	248	303	1,009	2,980
South Carolina	-	665*	1	223	29	27	187	467
Tennessee	0	5,594	0	0	0	0	617	617
Texas	-	102*	0	0	0	0	0	0
* Total sites.								
Total ~~[illegible]~~	591	31,890	29	21,883	8,470	7,738	9,581	47,701
~~Total From July 1~~								
Total from Beginning of Program	xxx	xxx	1,983	208,363	109,495	147,222	174,983	642,046

* Woodland excluded.

STATUS OF WHITE-FRINGED BEETLE POPULATIONS

June 30, 1958

State	No Specimens Found		Light Populations		Moderate Populations		Heavy Populations		Grand Total	
	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent
Alabama	65,543	26	90,760	37	69,687	28	22,123	9	248,113	100
Florida	18,898	22	31,652	37	30,331	36	4,096	5	84,977	100
Georgia	48,748	45	52,676	48	6,571	6	1,010	1	109,005	100
Louisiana	19,309	84	3,600	15	118	1	0	-	23,027	100
Mississippi	22,783	17	81,302	59	29,285	21	3,479	3	136,849	100
North Carolina	5,985	23	16,832	64	3,629	13	0	-	26,446	100
South Carolina	0	-	3,499	100	0	-	0	-	3,499	100
Tennessee	3,274	32	6,000	59	856	9	0	-	10,130	100
TOTAL	184,540	29	286,321	44	140,477	22	30,708	5	642,046	100

WHITE-FRINGED BEETLE

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1958

Date prepared:

STATE COUNTY LOCALITY A	Nursery B	ACRES TREATED WITH INSECTICIDES (First Treatment)						ACRES OF RETREATMENT I
		FARMLAND (Include Woodland)			NON-FARMLAND			
		With Ground Equipment		With Aircraft	Surface	With Aircraft	Foliage	
		Broadcast Insecticide Only C	With Fertilizer D	E	F	G	H	
Alabama	1,502	3,752	13,815	475	2,766	0	19,431	546
Florida	284	1,851	720	0	1,549	0	0	0
Georgia	640	2,758	263	1,441	4,556	4,341	18,065	29
Louisiana	965	38	0	684	1	0	915	0
Mississippi	527	2,613	142	0	1,702	0	1,536	100
North Carolina	116	2,136	0	0	2,518	0	0	200
South Carolina	71	224	0	0	120	0	0	0
Tennessee	148	55	0	0	445	0	92	0
Total This Period	4,253	13,427	14,940	2,600	13,657	4,341	40,039	875
Total From July 1								
Total from Beginning of Program								

PPC 7-13a
(Mar.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program White-Fringed Beetle

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Alabama	5	4	2	1	0	0	5	7	0	0	1	0
Florida	8	8	3	0	0	0	98	1	100	25	0	0
Georgia	58	36	44	0	15	0	48	11	200	20	48	0
Louisiana	4	4	4	0	0	0	0	0	0	0	2	0
Tennessee	0	3	7	0	0	0	0	1	45	230	0	0
Total	75	55	60	1	15	0	151	20	345	275	51	0

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

* --- *

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

WILD COTTON

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

Excessive, unseasonable rainfall, extremely low temperatures, and high winds, resulting in unusually low tides, adversely affected field operations. However, all of the Wild Cotton work areas, involving approximately 20,000 acres in 11 counties, were worked by March; and 3,000 additional acres, principally in the Cape Sable area, were worked for the second time. Observations were continued in the pink bollworm infestation in Hibiscus on Plantation Key, and insecticidal treatments were applied to keep this infestation under control.

B. Major deviation from Work Plan

There were no major deviations from the original work plan, other than the temporary cessation of work due to excessive rain and delay in working some of the off-shore islands when the water was so low it was not possible to operate boats which are necessary in that work.

C. Status of Program at close of year

It was not possible to rework as much of the Wild Cotton acreage as would be desirable because of adverse weather conditions. Pink bollworms were found in wild cotton at seven locations, all of which were in the extreme southern part of the state. In addition, progress was made in the control of the infestation in Hibiscus. Inspections of Hibiscus in other locations were negative.

II. Program Activity during fiscal year

A. Planning and Direction

In keeping with funds made available, plans were drawn up by area and district personnel to provide for as efficient operation as possible. The program was reviewed with the State Plant Board personnel and with the county agents, as well as personnel of the Department of the Interior. Part of the work involves property controlled by the Department of the Interior.

B. Technical Assistance

Not applicable

C. Survey

1. Procedures or techniques used

Field crews scouted on foot all likely locations on lands above mean high tide which might support growth of wild cotton. It was necessary to operate boats to reach many of the locations where wild cotton might grow. The land areas to be scouted vary from very small plots in some locations to hundreds of acres in other locations. Surveys were made in cities and towns for plantings of ornamental cotton. The latter surveys were made generally in connection with other program activities by both Federal and State workers. No commercial cotton plantings are allowed in 17 southern Florida counties.

2. Accomplishments

During the report period, 19,832 acres were surveyed in swamp and jungle lands in 11 coastal counties. Of this total, 3,000 acres represented land which were covered for the second time in order to remove plants that might have been missed during the first operation due to their extremely small size. Field inspections for wild cotton were begun in late November and were terminated in early April. Inspections for domestic or dooryard cotton were continued throughout the year in connection with other State Plant Board and USDA programs.

In excess of 38,800 fruiting forms of wild cotton were inspected in the 11-county work area, and 33 pink bollworms were found, involving seven different locations, all of which were in the extreme southern part of the state. Inspections were made of Hibiscus in the known infested area on Plantation Key in Monroe County. More than 16,000 Hibiscus blooms were checked, from which over 300 specimens were recovered. This is the highest recovery of specimens in Hibiscus since it was determined that the insect was completing all of its life stages on this plant. Inspections of Hibiscus in other sections did not reveal infestations.

3. Statement or table of pest damage

Not applicable

D. Eradication or Control

1. Procedures or techniques used

As the survey crews discovered wild cotton or dooryard cotton, the plants, including the root system, were removed manually to prevent further growth. Because of the dense growth on terrain involved, a light string was used as a guide line to prevent overlapping of work areas as well as to prevent omitting any areas. A heavy build-up of pink bollworm populations in Hibiscus was found, and insecticidal treatments were applied in an attempt to eliminate the infestation.

2. Accomplishments

In the 11-county work area, 35,539 seedlings and 2,247 mature cotton plants were destroyed.

A heavy application of 10 percent granular dieldrin was applied experimentally in September under the Hibiscus plants which were known to be infested. This material did not control pink bollworm. After consultation with the research laboratories, applications to the Hibiscus plants were made with Sevin, a new insecticidal spray. The insecticide was applied with mist blowers. These treatments, applied in early January, drastically reduced the pink bollworm infestation in Hibiscus. In fact, no specimens could be found again until June. Additional applications of Sevin were made at that time to bring the infestation under control. The insecticidal sprays were applied on a 2-week schedule.

E. Regulatory

1. Procedures or techniques used

Since commercial cotton plantings were not allowed in the work area, it was only necessary to make periodic checks to determine that no areas were planted to cotton.

F. Methods Improvement

A number ot test areas were treated on the mainland Keys and on the west coast of Florida to determine the practical use of several herbicides as a means of controlling established wild cotton and eliminate continued sprouting. This work was initiated during the previous report year, and promising results were obtained with some of the materials which were under test. As a result, larger test plots were treated. Prior to the application of the various chemicals under test, wild cotton seeds were planted in each of the test plots to determine whether new plants would appear. Of the 11 materials under test, three showed considerable promise as follows: General Chemicals' Compound No. 2603, a granular formulation of TCA and Monuron; a compound of 2,4-D, 245 T, and Telvar in kerosene; and a granular formulation of 2,4-D.

G. Other

1. Cooperation received during Fiscal Year

Personnel of the Florida State Plant Board cooperated in the program by reporting any ornamental cotton plants they detected while making routine surveys of nurseries and groves within their area. Personnel of the Everglades National Park Service provided equipment and labor in mowing the camp site grounds during the summer and fall months. The labor camp site was also provided

free by the National Park Service. The City of Homestead, Florida, provided free water for use at the labor camp.

2. Associated Activities and Services

The agricultural editors of leading newspapers published stories that indicated the importance of the program as it relates to the agricultural economy of the nation. These news articles pointed out the necessity of the public reporting to local Plant Pest Control Division personnel any host plants that were undetected after surveys were made. After such stories were carried periodically, reports were received by letter or telephone of host plants that were not known to exist.

III. Recommendations for coming year

A. Survey

Survey should be expanded in wild cotton growing areas in order to reduce to a minimum host plants that may be growing from seed disseminated by storms or by wildlife outside of areas where inspections are normally made. Additional surveys should be made in cities and towns for ornamental cotton plants that may become infested.

B. Eradication or Control

Field operations should be initiated earlier in the season if possible in order to reduce the growing period of the wild cotton plants to prevent to the fullest extent any plants from producing mature bolls. Every effort should be made to eliminate the pink bollworm infestations found in Hibiscus. If the insect is allowed to develop a strain that will infest other varieties of Hibiscus, it will be next to impossible to prevent the spread of the pink bollworm from south Florida into the cotton producing areas of the Southeast.

C. Regulatory

Not applicable

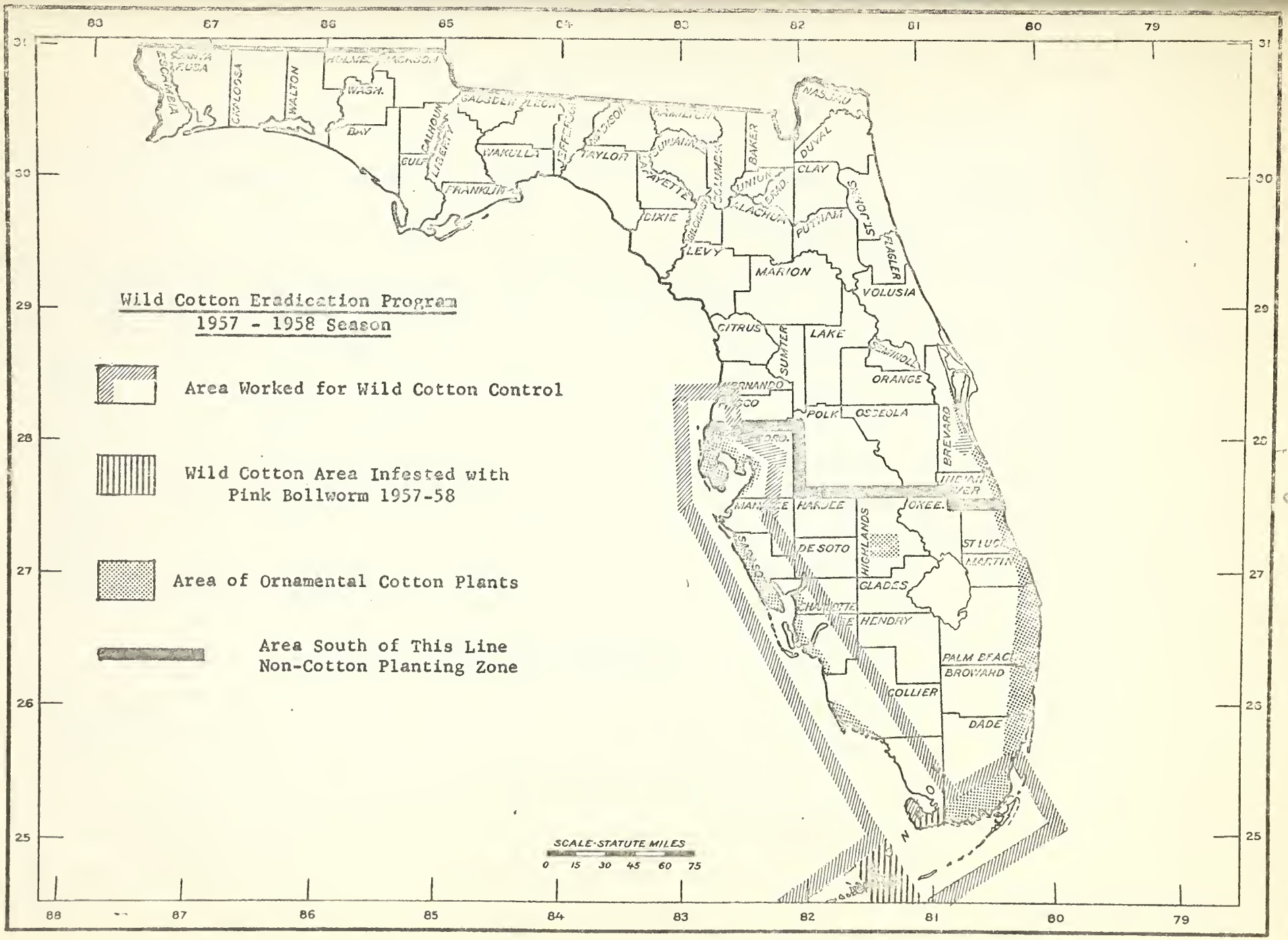
D. Methods Improvement

Work in testing control by herbicides, rather than by manual destruction of plants, should be expanded, as this method or operation holds considerable promise as a means of reducing labor costs involved in the control of wild cotton.

E. Associated Activities

Greater efforts should be made in expanding public relations work through the issuance of news releases, etc.

FLORIDA


Wild Cotton Eradication Program
1957 - 1958 Season
Area Worked for Wild Cotton Control
Wild Cotton Area Infested with Pink Bollworm 1957-58
Area of Ornamental Cotton Plants
Area South of This Line Non-Cotton Planting Zone
SCALE-STATUTE MILES
0 15 30 45 60 75
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
JACKSON
WASH.
BAY
GULF
CALHOUN
LIBERTY
GADSDEN
LEON
WAKULLA
FRANKLIN
JEFFERSON
MADISON
TAYLOR
HAMILTON
SUWANNEE
LAFAYETTE
COLUMBIA
BAKER
NASSAU
DUVAL
CLAY
UNION
BRADFORD
ALACHUA
PUTNAM
ST. JOHNS
FLAGLER
DIXIE
LEVY
MARION
VOLUSIA
CITRUS
SUMTER
LAKE
SEMINOLE
ORANGE
HERNANDO
PASCO
POLK
OSCEOLA
BREVARD
INDIAN RIVER
MANATEE
HARDEE
OKEE.
HIGHLANDS
DE SOTO
ST. LUCIE
MARTIN
GLADES
CHARLOTTE
HENDRY
PALM BEACH
BROWARD
COLLIER
DADE
N

WILD COTTON

REGION	PREPARED BY
Southern	
PERIOD (Designate Month, 1-15, 16-31, or 1-31)	DATE PREPARED
July 1, 1957 - June 30, 1958	

STATE, COUNTY, & CODE NUMBER A	INSPECTION OF BLOOMS, SQUARES, & BOLLS		ACRES CLEANED		PLANTS DESTROYED	
	NUMBER B	INFESTATIONS C	THIS MONTH D	THIS SEASON E	SEEDLING F	FRUITING G
FLORIDA						
Brevard	0	0	0	6.00	113	0
Charlotte	2,810	0	0	803.40	1,414	56
Collier	1,110	0	0	886.25	3,422	45
Dade	5,095	0	0	5,550.25	12,008	775
Hillsborough	0	0	0	52.70	30	0
Lee	1,636	0	0	732.50	2,354	38
Manatee	0	0	0	204.90	403	0
Monroe	28,181	7 locations	33 PBW 0	11,520.75	15,774	1,333
Pasco	0	0	0	6.00	5	0
Pinellas	0	0	0	21.10	1	0
Sarasota	0	0	0	48.30	15	0
Dooryard & Ornamental Cotton Plants						
Dade	0	0	0	0	25	15
Highlands	0	0	0	0	0	1
Hillsborough	0	0	0	0	110	0
Manatee	0	0	0	0	22	1
TOTAL THIS PERIOD	38,832	7	0	19,832.15	35,696	2,264
TOTAL FROM JULY 1						

PPC FORM 7-14
FEB 1958

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Wild Cotton Program

Region Southern

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Fiscal year 7/1/57 - 6/30/58

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Wild Cotton Program	1	1	1	-	-	-	72	-	-	-	1	1
Total												

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

(*--*)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
EASTERN REGION

ANNUAL PROGRAM REPORT

WITCHWEED

July 1, 1957 - June 30, 1958

COOPERATING AGENCIES:

State Plant Pest Control Agencies
Extension Service
and
Plant Pest Control Division
Agricultural Research Service
U. S. Department of Agriculture

November 1958
Moorestown, New Jersey

H. L. Smith
Regional Supervisor

TABLE OF CONTENTS

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

A systematic detection survey for this plant pest was conducted in the southernmost tier of counties in Virginia, and in the southern section of Maryland. A total of 1,065 properties with 6,079 acres planted to corn were so inspected. No evidence of witchweed was observed.

B. Major deviation from work plan

None

C. Status of program at close of year

There is no known witchweed infestation in this Region.

II. Program Activity During Fiscal Year

A. Planning and Direction

Survey activities were planned and directed jointly by cooperating State pest control officials and PPC Station Supervisors, following discussions at the Regional level.

B. Technical Assistance

PPC Division personnel provided information and descriptive literature as to the nature and significance of this plant pest to farmers and other interested persons.

C. Survey

1. In the southern section of Virginia, bordering the North Carolina line, all roads were traversed and all corn fields along routes of travel were observed for symptoms, and every fifth field was foot-scouted. In the Maryland section each field inspected was foot-scouted.

2. In Virginia and Maryland 1,041 and 24 properties with 6,038 and 41 acres of corn respectively, were surveyed during the year.

3. Statement of pest damage - No damage observed.

D. Eradication or Control

Not Applicable

E. Regulatory

Not Applicable

F. Methods Improvement

Not Applicable

G. Other

1. Cooperation received during fiscal year

The State of Virginia furnished the services of 12 inspectors and 6 vehicles for approximately 10 weeks. Some supervisory assistance was also provided.

2. Associated activities and services

Information on this plant pest was furnished to corn and other host plant growers and their cooperation in detection efforts requested.

III. Recommendations for Coming Year

A. Survey

Expand surveys to include other corn producing areas in the Region.

B. Eradication or Control

Not Applicable

C. Regulatory

Not Applicable

D. Methods Improvement

Not Applicable

E. Associated Activities

Continue to disseminate information on this pest to growers and others interested.

WITCHWEED (STRIGA)

EASTERN REGION

FISCAL YEAR 1958

STATE COUNTY LOCALITY A	SURVEY Properties B	SURVEY Acres C	INFESTATIONS FOUND Properties D	INFESTATIONS FOUND Acres Cultivated E	INFESTATIONS FOUND Acres Non-Cultivated F	CONTROL Chemical Properties G	CONTROL Chemical Acres H	CONTROL Cultured Properties I
Maryland	24	41	-	-	-	-	-	-
Virginia	1041	6038	-	-	-	-	-	-
West Virginia	1	13	-	-	-	-	-	-
Total from July 1 to 6/30/58	1066	6094	-	-	-	-	-	-
Total from beginning of program	1066	6094	-	-	-	-	-	-

Report: Total counties by States infested from beginning of program

PPC 7-21

* -- *

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
SOUTHERN REGION

ANNUAL PROGRAM REPORT

WITCHWEED

July 1, 1957 - June 30, 1958

In cooperation with other
Federal, State, County, and Local Agencies

November 15, 1958
Gulfport, Mississippi

C. C. Fancher
Regional Supervisor

I. Highlights of Year's Program Activity

A. Accomplishment for the fiscal year

This new serious pest was first reported in North America late in the summer of 1956 when it was found in a North Carolina field. Subsequent surveys that same year revealed its presence in four North Carolina counties and in four adjoining South Carolina counties. Intensive surveys were made throughout the growing season of fiscal year 1958 in most of the states of the Southern Region, and by the end of the report period witchweed had been found in eleven North Carolina counties and in six South Carolina counties, all forming a contiguous general area of infestation.

Steps were taken during this first full year of fighting the pest toward devising ways and means of coping with its serious threat to American agriculture. Quarantines, both federal and state, were placed in operation in an effort to prevent further local spread and, most important, to prevent spread beyond the apparent more or less localized infested area of the Carolinas. Research on every phase of the problem was started at the Carolina Experiment Stations, and studies of control methods and commodity treatment procedures were initiated by the Methods Development Section of the Southern Region of the Plant Pest Control Division. More than 20 different crops are grown in the infested area which emphasizes the importance of sound treatment and quarantine practices in the all-out federal-state fight against this new enemy. Control and eradication methods were given careful thought during the year, and plans were developed for a mass attack against witchweed by the combined forces of federal and state pest control agencies together with the affected land owners by a combination of catch crops in rotation practices and treatments with chemical herbicides wherever practicable. A pilot eradication program was started on 68 farms in 14 counties during the year.

B. Major deviation from Work Plan

None.

C. Status of Program at close of year

In the 17 infested counties of the Carolinas, witchweed infestations were known to exist on farms totaling 191,185 acres. Requirements of federal and state quarantines have been brought to the attention of farmers, nurserymen, and others likely to be affected. Marketing of all crops likely to present hazards

in the spread of the tiny seeds was very closely supervised as was the movement of animals, vehicles, machinery, and any other farming activity capable of moving seeds to noninfested localities, counties, or states.

II. Program Activity during fiscal year

A. Planning and Direction

Division representatives and state control and regulatory officials met in conference and developed operation plans for the year. Field direction of the program was delegated to the supervisors in charge of the several states of the Region by mutual consent of the cooperating agencies. Direct supervision of survey, control, and regulatory activities was the responsibility of district supervisors. Except in the infested districts of the Carolinas, program activity concerned surveys only. Control plans were developed and pilot treatments were under way by the end of the period. Federal Quarantine No. 80 regulating movement of all articles, vehicles, animals, machinery, etc. likely to disseminate seed of witchweed became effective September 6, 1957.

B. Technical Assistance

Since witchweed is a new pest in the western hemisphere, knowledge of its habits, its seriousness, and its control was rather meager. All available literature on the pest was reviewed as rapidly as possible and information was disseminated by Extension Service in the Carolinas to all farmers and others interested or likely to be affected. Pamphlets, program aid leaflets, and mimeographed material were prepared and disseminated over all of the infested areas, and many farm meetings were called so the program could be discussed by Research, Extension, control, regulatory and transportation officials.

C. Survey

1. Procedures or techniques used

Two methods were followed in making surveys for witchweed: (1) host symptoms, and (2) looking for the witchweed plant in the "above ground" stage.

Host symptoms are quite similar to those caused by acute drought. The attacked plants wilt rather suddenly, are usually stunted, turn a yellowish-green color, and if heavily parasitized they will die. Suspected plants are pulled and the roots examined. If witchweed is the cause, a mass of grey or dirty-white filamentous root-like growths will be found intermingled with and attached to the roots of the affected plant.

About 6 or 8 weeks after the first indication of host wilting, the witchweed plants appear above ground, turn green, and shortly thereafter the brick red or scarlet, and sometimes yellowish red to yellow or almost white blooms appear. The plant, particularly after blooming, is rather unique and after an inspector has seen a few of them he is not likely to confuse it with any other plant.

2. Accomplishments

Surveys were made in 168 counties of six states and 1,812,295 acres on 42,106 properties were inspected in these counties. No evidence of infestation was found in any of the states except the Carolinas. In North Carolina, infestations were found on 1,324 farms representing 127,119 acres, and in South Carolina, infestations were found on 419 farms representing 64,066 acres. The infested counties in the Carolinas, which at the end of the fiscal year totaled 17, are contiguous and the general area of infestation appeared to be closely related to the trade area of the farm products grown in these counties.

3. Statement or table of pest damage

Corn damage was apparent in all infested fields. The degree of damage ranged from an occasional wilted plant to a complete loss of stand. Although corn is not the principal crop grown in the infested area, all farmers grow some, either for grain, silage, or forage. The agricultural economy of the infested area, therefore, could not afford to lose the value of the corn crop.

D. Eradication or Control

1. Procedures or techniques used

The long-range plan of the witchweed program is eradication. During the report year, pilot operations were set up on 959 acres on 68 properties in the two Carolinas using corn as a catch crop. The general plan of the catch crop system was to arrange with the farmers on a contract basis to take the land out of cultivation and to plant the catch crops at the specified times and also to furnish all labor and equipment required for destroying the crop at the time specified by the program inspectors. The initial crop was followed immediately by a second crop.

The catch crop phase of the program was supported by spraying adjoining wooded areas and around fence rows with weed killers such as 2,4-D. These herbicides were applied with hand sprayers which were loaned to the farmers. In addition

to using the 2,4-D herbicide, many farmers disked their land after harvest to reduce the amount of witchweed going to seed. Some farmers burned over areas where witchweed was present and others attempted to destroy the plants by hand pulling and hoeing.

2. Accomplishments

Insofar as control or eradication of witchweed is concerned it would be rather difficult to estimate the results of this pilot operation. The primary purpose of this pilot operation was, of course, to develop effective and efficient methods of eradicating witchweed by cultural methods. In addition to the cultural control phase of the program, herbicide treatments were made to 667 acres on 280 properties by Division personnel.

E. Regulatory

Federal Quarantine No. 80 became effective September 6, 1957. Prior to the effective date of the quarantine, every farmer with infested land was visited and details of the quarantine were explained to him insofar as it would affect his farm operations. As the fall crops began to move to market, detailed studies and observations were made of each crop in order to determine the safest method for placing it in normal trade channels. It was fortunate that although about 20 crops were harvested in the infested area, most of them moved but a short distance before some type of processing took place. Crops were successfully placed in their normal marketing channels either by supervising the harvesting procedure to preclude contamination, by a negative inspection of the growing areas, or by directing them to a designated processing plant where prescribed treatment was made. At the end of the reporting period there was no evidence of witchweed having been spread over long distances by crops or movement of other farm materials or animals from infested properties.

F. Methods Improvement

This section of the Southern Region developed a method of washing and screening to isolate witchweed seed which was used in determining the effectiveness of quarantine treatment procedures. A fumigation schedule was developed for certification of commodities and large units of farm equipment such as tractors and harvesting machinery. A study was made of methods of flue-curing tobacco to determine if temperature and time schedules could be developed that would allow the safe marketing of this important money crop from the infested areas. A study was also made of the chemical weed killer, 2,4-D, in order to determine an effective rate of application. Improvements were made to commercial sprayers for application of this herbicide. Other chemicals and fumigants were placed in field trials to determine if they may have a value in eradicating this serious pest.

G. Other

Both federal and state research agencies have been very active in developing information on witchweed in the Carolinas. Of particular importance to the field program has been the screen work of the various chemicals and fumigants to determine their effectiveness in controlling witchweed.

Research being conducted at the present time needs to be strengthened and expanded. The state and county offices of the Agricultural Stabilization Committees have been very cooperative by arranging for personnel of Plant Pest Control Division to manage land that has been placed in the Conservation Program. The management of this land is necessary in the catch crop program.

III. Recommendations for coming year

A. Survey

Surveys in the Carolinas and other states of the Southern Region should be considerably expanded and intensified. Sufficient surveys should be made to be sure that the outer limits of all infestations have been established. Where infestation is known to exist, farm-by-farm surveys should be made to determine all acreage that must be placed in the eradication program.

B. Eradication or control

The basic approach to the witchweed problem is its eradication through catch crop practices augmented by treatment of adjoining non-cultivated areas with chemical weed killers or herbicides. The catch crop treatment areas should be expanded to include all known arable infested land where such a program is practicable.

C. Regulatory

Quarantine enforcement must be continued to prevent, insofar as possible, any danger whatever of spread outside the presently infested areas. As improved methods of commodity treatments are developed, it may be possible to make present regulations less stringent. The eradication program, if effective, will considerably reduce the workload on crop certification as infested land is taken out of normal cropping practices.

D. Methods Improvement

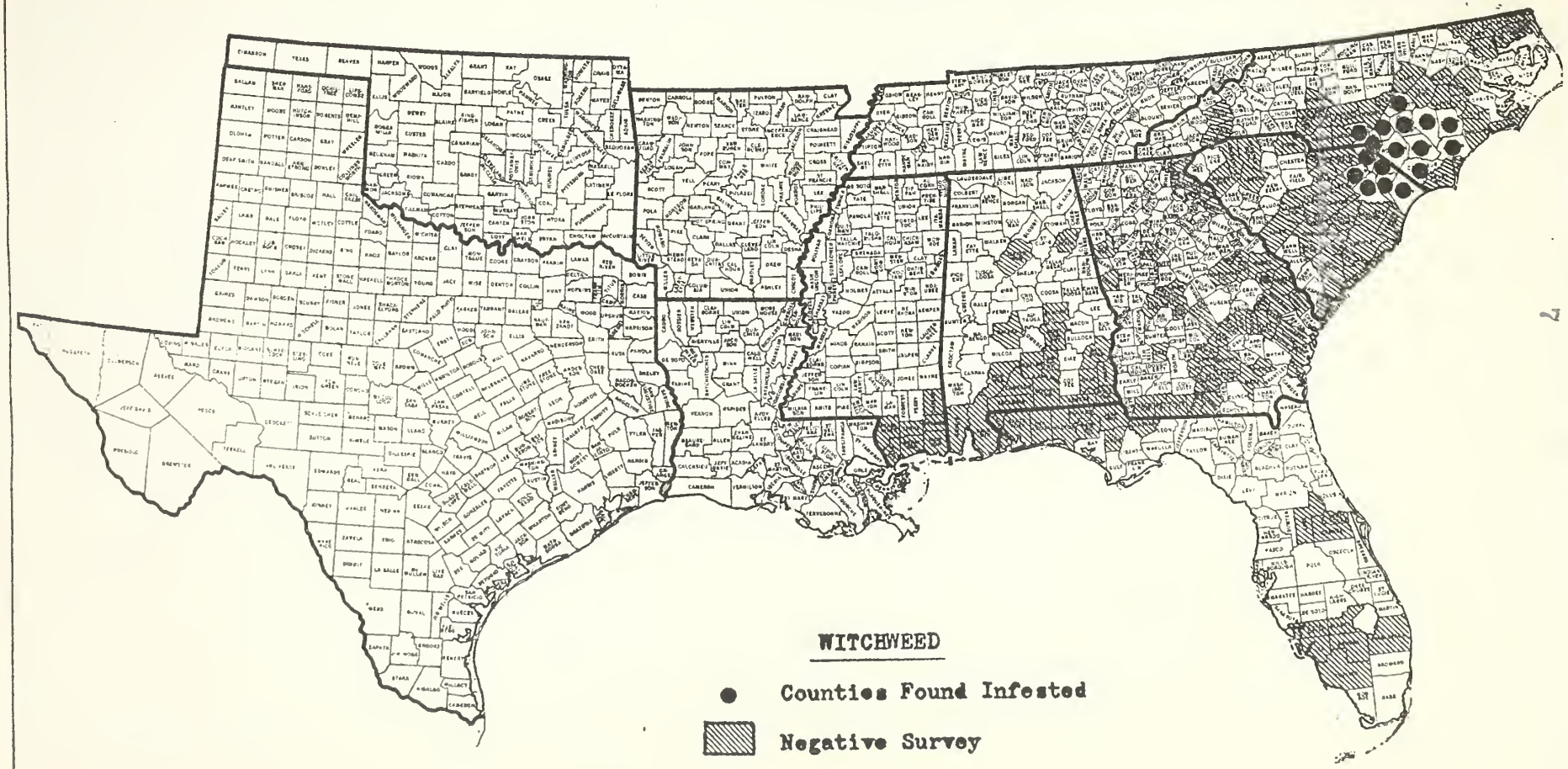
Investigations presently under way should be accelerated insofar as possible to lessen the time element between field trials and actual large scale field use of possible developments which would strengthen any phase of control activity.

E. Associated Activities

Federal and State research agencies should continue and expand their present studies. Perhaps a more formal cooperative agreement should be developed between Agricultural Stabilization and Conservation and the Plant Pest Control Division.

SOUTHERN REGION

PLANT PEST CONTROL DIVISION



WITCHWEED (STRIGA)

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1958

Date prepared:

STATE COUNTY LOCALITY A	SURVEY		INFESTATIONS FOUND			CONTROL			
				Acres		Chemical		Cultural	
	Properties B	Acres C	Properties D	Cultivated E	Non-cultivated F	Properties G	Acres H	Properties I	Acres J
Alabama	554	16,720							
Florida	331	43,833							
Georgia	5,770	40,573							
Mississippi	194	1,466							
North Carolina	21,975	1,409,626	1,324	54,346	72,773	194	381	52	642.7
South Carolina	13,282	300,077	419	27,262	36,804	86	286	16	316.6
Total	42,106	1,812,295	1,743	81,608	109,577	280	667	68	959.3
Total From Beginning of Program	44,588	1,858,918	1,743	81,608	109,577	280	667	68	959.3

Report: Total counties by States infested from beginning of program

PPC 7-21
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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Program Witchweed

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by:

Region Southern

Fiscal year 1958

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used**				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.*	Cir.*	Infest. Maps & Posters	
Florida	1	1	1	-	-	-	34	1	90	-	-	-
Georgia	5	-	5	-	-	-	2	1	200	-	-	-
Total	6	1	6	-	-	-	36	2	290	-	-	-

*Written by Federal personnel for release direct or through cooperators.
**This should be a conservative estimate (accurate record for these items impractical).

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